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# THE MEDICAL JOURNAL OF AUSTRALIA

VOL. I.—30TH YEAR. SYDNEY, SATURDAY, JANUARY 30, 1943. No. 5.

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## Table of Contents.





## E. H. Embley Memorial Lecture.[1]

(THE UNIVERSITY OF MELBOURNE.)

### ANÆSTHESIA IN MILITARY HOSPITALS.

By WILLIAM BARCLAY PARSONS,
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EDWARD HENRY EMBLEY, to honour whose memory this series of lectures was founded, established his reputation mainly by his researches in anæsthesia, although actively engaged in other fields of scientific activity. Perhaps some future Embley Memorial Lecture will be on some other topic than anæsthesia; but we are now in the midst of war, and as none of the previous lecturers has more than alluded in passing to wartime anæsthesia this subject seemed rather obviously appropriate at this time. It is reasonably certain that were Embley alive today his active interest and sound mind would have been engaged in this particular aspect of the general problem of anæsthesia; the agents used, the methods of administration, the dangers and advantages of the various procedures and the physiology involved would undoubtedly have been scrutinized by him, and in all probability some contribution would have resulted therefrom, perhaps comparable to those resulting from his researches of many years ago into the physiological disturbances leading to death under chloroform anæsthesia.

Twenty-five years ago, even in the large metropolitan teaching hospitals the number of anæsthetic agents in use was limited. Chloroform, ether given by the "open" and "closed" methods, solutions for local infiltration, nitrous oxide, gas and oxygen with and without ether, represented the list of agents available at that time. Rectal administration was just coming into use, and although spinal anæsthesia had been invented at that time, it was not until after the war that it came into general use. When one left the well-equipped urban hospital and entered a general hospital or casualty clearing station in France, one bade farewell to gas cylinders in all but an occasional instance. Ether and chloroform then became the stand-bys; the latter was used extensively by the British (as was natural, considering the popularity of chloroform in Great Britain), but also by those Americans who came under British influence, and who tried to use the inferior grade of ether not uncommon at times in the British Expeditionary Force. Even the best ether did not vaporize well in the damp atmosphere along the French coast, or during the winter in Belgium or on the Somme. Induction of anæsthesia with chloroform followed by the administration of ether was the usual practice in these areas. Under the conditions described, this method accomplished a more rapid and less noisy progress than was possible with ether alone through the distinctly vocal and physically active second stage, so common in battle casualties, to a satisfactory depth of anæsthesia. For short anæsthesia, such as would be required for painful dressings, quick amputations or operations of short duration, a mixture of ethyl chloride, chloroform and ether inside a semi-permeable bag had considerable popularity in some areas. Parenthetically, it is interesting to note the advance that has been made from the use of this mixture, in the eyes of today so crude and dangerous, to the modern technique of "intravenous" anæsthesia for the same type of operation.

Prolonged surgical procedures in those days were, of course, carried out under inhalation anæsthesia. Battle casualties received what shock therapy was available in the way of infusion and transfusion; but operative shock and operations on the shocked were constantly recurring problems that contributed heavily to morbidity and mortality. Similar problems existed in civil practice; but there was in many clinics a conscious attempt by certain surgeons to minimize by gentleness and accuracy of technique the harmful effects of operation. To mention only one, there was Harvey Cushing. His insistence on hæmostasis, careful solicitous handling of the tissues, adequate exposure and the use of silk sutures inculcated in him by Halstead, had an incalculable influence as we all know on the modern development of brain surgery. This was so widely recognized that it was a surprise to

[1] Delivered on November 11, 1942.

find that Mennell,[1] in the Embley Memorial Lecture of 1935, decried the slowness of many operators and the fact that six or seven hours were required for certain brain operations. Moreover, he had nothing but praise for the "speed merchant" type of operator. It was, therefore, most gratifying to read the editorial[2] that appeared in the same issue of THE MEDICAL JOURNAL OF AUSTRALIA with this lecture, criticizing unfavourably this point of view in no uncertain terms. The editorial pointed out clearly and wisely how delicacy of technique had widened in scope the fields open to surgical attack, and that operations of long duration, or of technical difficulty, or associated with shock, were relatively safe procedures in the hands of those with delicacy of technique, but were associated with a high mortality rate in the hands of the "rough and ready" type of surgeon, for whom speed of operation was the main thing that counted. The dawdler—he who has been called the "slow motion" operator—has no place in surgery; but neither has the man whose aim in life is to be known as the fastest operator in town. Safe anæsthesia has been one of the main factors in the recent advances in surgery, and, for example, has opened the chest to a variety of procedures barely dreamed of twenty-five years ago. Modern anæsthesia and methods of combating shock give the surgeon with fine technique and an habitual orderly smartness of operating almost unlimited opportunity in the practice of surgery.

Shock—before, during and following operation—has always been and still is a major problem. That element of what one could call the total shock factor in a patient, due solely to anæsthesia and to the trauma incident to operation, will obviously be magnified in proportion to the degree of shock present prior to operation. This truism may seem trite, but it assumes significance when one compares the situation during the last war with the possibilities of today in those units well equipped with the means of administering blood and blood substitutes. It is idle to speculate on what might have been done in the past; but one cannot help but think of the faint trickle of blood available for transfusion, of the inadequate amounts (according to modern standards) of salt solution and glucose that were available in the advanced surgical hospitals in both the British Expeditionary Force and the American Expeditionary Force, of the early fumbling with gum acacia, and of how limited our knowledge was at that time of the nature of shock and how to combat it. Our ignorance at any one date is, of course, nothing to be ashamed of, provided that our efforts are sincere and unremitting and utilize to the full all available knowledge and experience. Today's knowledge may be a paltry thing tomorrow; but limited though it may be, there can be no doubt that we are saving lives today that would have been lost twenty-five years ago. This has a direct bearing on anæsthesia, because it follows that for the unshocked, and to a less degree for those whose shock has been well treated, anæsthesia and consequently operation are smoother and better tolerated. The combat soldier falls into an age group, and he represents a select physical type that withstands anæsthesia and operation better than the "run of the mill" civilian patient. Profound shock, however, is a contraindication to any except the occasional quick, absolutely life-saving operation, and even for the soldier pre-anæsthetic shock therapy assumes major importance and must be considered as much a part of the pre-operative routine as the preparatory sedation.

To digress a little from the theme of this discussion, some comment is called for in reference to the article of Troup,[3] in which he speaks so highly of the training of anæsthetists by Waters and rather disparagingly of the use of nurse anæsthetists in the United States. It happens that the speaker is old enough to have witnessed the three phases in the development of the anæsthetist that has occurred in the United States in the past thirty years, and can say a word in favour of the use of the nurse anæsthetist as almost an emergency measure in the process as it developed. In his days as an undergraduate, anæsthetics were administered by the junior interne on the house staff, and it was up to him to learn how to do it by hook or by crook, by reading the few available books, by asking questions, and frequently, to his embarrassment, by being told in no uncertain terms by the operating surgeon. This was like teaching a child to swim by throwing him overboard. The men learned how to "keep a patient under"; but anæsthesia then was far from artistic or scientific. Something had to be done to relieve this acute situation, and as there was a shortage of professional anæsthetists in those days, the expedient of training nurses in anæsthesia was adopted. When the speaker was himself an interne, a graduate nurse trained in anæsthesia acted as instructor and demonstrator to the interne staff in the operating theatre, and also trained a group of nurses to be her assistants. Without the shadow of a doubt this represented a real advance over the practice prevailing previously; the variety of agents was limited, the people engaged in this work were selected because of their interest and intelligence, and in the vast majority of cases succeeded in inducing anæsthesia of a satisfactory, if not of the highest, grade of excellence. As mentioned before, there were at that time, in a city like New York, for example, only a few medical graduates who specialized in anæsthesia. These men were so busy with their private cases that their services were hard to obtain except for unusual cases. The nurse anæsthetist, although distinctly inferior to these specialists in difficult cases, was nevertheless distinctly superior to the untrained interne, was adequate for the ordinary ward service, and served a most useful function in the circumstances prevailing in that day. When the last war came along, all our general hospitals took with them a staff of nurse anæsthetists, much to the amazement it may be said of some of our British friends; but in most cases this feeling of doubt was speedily dissipated. These women gave anæsthetics at casualty clearing stations as well as at the base hospitals. When medical officers were called upon to supplement these nurses, many were trained or had been previously trained by these nurses. One of the advantages of this system was that each anæsthetist liberated a medical officer for other work—a point of considerable importance at a casualty clearing station, for example, or even in general hospitals, considering the shortage of medical personnel.

The third phase in the development of the anæsthetist is now in existence in many of the large teaching hospitals in the United States and is of the type so warmly approved by Troup[3] and by Brown.[4] Waters, of the Wisconsin General Hospital, at Madison, Wisconsin; Apgar, of the Presbyterian Hospital, and Rovenstine, of the Bellevue Hospital, both in New York; and Lundy, of the Mayo Clinic at Rochester, Minnesota: these are a few of the teaching specialists in anæsthesia, in each case head of the department of anæsthesia in his own hospital. Devoting their full time to their hospitals, they induce anæsthesia, teach the students and internes, and do research work in their specialty. Under them as residents in anæsthesia are medical graduates who have already finished their interneship, have decided on anæsthesia as their specialty, and will now embark on a year or more of intensive work in this field. This programmes results in the production each year of a goodly number of well-trained professional anæsthetists who are capable of heading departments of anæsthesia in other institutions, so that eventually the nurse anæsthetist will disappear and all anæsthetics will be administered by trained professional personnel. This is only right and proper, considering the distance along scientific lines that anæsthesia has progressed, the complicated apparatus in use and the great activity of the agents available, many of which have a high grade of toxicity or other dangers associated with their administration. One of the interesting points that have appeared in observing the work of these residents has been the great success achieved by the women doctors who have taken up this work. Perhaps it was the feminine touch which was an overwhelming factor in the success of the nurse anæsthetist, and this same influence favours these women doctors; but it has been so definite that many of us have thought that this field may turn out to be one of the most fruitful and useful for the woman specialist. It has been a source of real regret that so far there has

been no army regulation authorizing the use in the army of these professional female anæsthetists. Nurses may induce anæsthesia, but there is no provision for these women doctors to serve.

The majority of general hospitals will be situated near large urban centres, so the problems associated with surgery and anæsthesia in them will approach the circumstances of peace-time as regards equipment and material. The further up the line one goes, the greater the simplification of equipment on hand and the more limited the scope of surgery. Gas cylinders are bulky and cannot be transported beyond a certain point. Somewhere, then, nitrous oxide is not available, although oxygen may be and probably should be on hand. This curtailment in the variety of agents available is expressed also in many other restrictions affecting pre-operative and post-operative care, laboratory facilities and general surgical technique. At times, in great emergency, it will be necessary to undertake surgical procedures that would come under the title of operations even in advance of the first hospital for operative care of casualties; but these instances will be so rare, and there will be such a necessity for individual improvisation, that any attempt to discuss them would be futile. In the first hospital for surgical treatment of a definite nature a wide variety of conditions will require surgical attention, and most of them will need operation. Wounds of the soft parts, wounds of the head, the chest, the abdomen and the extremities, simple and compound fractures, and a large number of burns will require anæsthesia. Ether will be the agent of choice for those casualties requiring deep anæsthesia for long operations, in particular when no oxygen is available as an adjuvant for one of the other agents. Personal predilection will be the dominating factor in the amount of spinal anæsthesia used; but even the enthusiasts will avoid it for those casualties likely to be evacuated within twelve hours.[5] Pender and Lundy[6] and Searles[7] feel that local infiltration anæsthesia and plexus block should be used whenever possible, with or without one of the other agents. The last-mentioned cites the practice at Buffalo General Hospital, where basal anæsthesia with "Avertin" and amylene hydrate, followed by local infiltration and the intermittent administration of "Pentothal Sodium", is satisfactory in lengthy brain operations, and the use of oxygen combined with splanchnic block and the administration of "Pentothal Sodium" is not uncommon for some of their major abdominal operations. All writers agree that for the vast majority of operations in the advanced area "Pentothal Sodium" will be the anæsthetic agent of choice.

During the past eighteen months, a large number of articles have appeared in medical publications on "intravenous" anæsthesia with "Pentothal Sodium", its pharmacology, chemistry, toxicity, indications and contra-indications. These reports, citing series of cases varying from a few hundred to several thousand, emanate from all types of hospitals, ranging from the large university teaching institution to the most advanced regimental aid post. All reports are enthusiastic, and it is interesting to note that there is almost unanimity of opinion on the "pros" and "cons" of this agent, as compared with the wide divergence of thought on the whole subject of spinal anæsthesia. These articles overlap so much that it is nearly impossible except in isolated instances to give more than general credit for data obtained as shown in the bibliography; but the articles by Marshall,[8] Phillips,[9] Searles,[7] Stanley,[10] and Pender and Lundy,[6] and the exhaustive review of the American, British and foreign literature by Long and Ochsner,[11] have been the most instructive. The only points on which difference of opinion is found are in reference to the scope of applicability of "Pentothal Sodium", the ways in which detoxification in the body occurs, and some of the contra-indications to its use. However, these differences of opinion are more evident in the papers of eighteen months ago than in those of the past six months.

"Pentothal Sodium" is the latest in a considerable series of barbiturates used intravenously to produce narcosis. Ore in France,[6] in 1872, was probably the pioneer in "intravenous" anæsthesia when he injected chloral hydrate into the vein, and his work started a number of men experimenting with a variety of agents. It was not until 1924 that Fredet and Perles in France[7] began work with the barbiturate series with a combination of barbital and "Dial". "Pernocton" was brought out three years later by Bumm[7] in Germany. "Sodium Amytal" was introduced in the United States by Zerfas[4] in 1929. Lundy[5] reported the first series with "Nembutal" in 1930, and called attention to the disadvantageously long post-operative sleep following its use. The use of "Evipal" in 1932 was reported from Germany by Weese and Scharff.[7] All of these preparations had in their day their successes and failures, and for the most part they have passed into history with so many other medical stepping-stones.

"Pentothal Sodium", which chemically is sodium ethyl (1-methybutyl) thiobarbiturate, was developed by Lundy and reported by him in his annual report of the Section on Anesthesia of the Mayo Clinic for 1934. It is a "light" or quick-acting barbiturate as compared with "Nembutal" and "Sodium Amytal", which are "heavy" and have an undesirable prolongation of effect, with a post-operative sleep that may last for many hours. This quick action of "Pentothal Sodium" is due to the fact that it is destroyed rapidly in the body. The rate of destruction[11] varies, however, with the amounts injected and the duration of anæsthesia. The results of experiments to determine this rate of destruction have varied from three to twelve hours as the time when no more of the drug can be recovered following the administration of a single anæsthetic dose. After continuous prolonged dosage there is an accumulation in the blood stream out of proportion to the amount given. This factor varies with different species of laboratory animals. Several authors have shown that in rabbits the destruction after prolonged dosage is at a rate only half as fast as that following a single dose. The reason for this has not been clarified. Some think that the liver and other tissues can handle just so much of the drug at one time and no more, while others feel that actual damage occurs, from which recovery must take place before further detoxification is accomplished. This point is perhaps of no more than academic interest when we consider the relationship between the anæsthetic dose and the minimal lethal dose of this drug. Long and Ochsner[11] quote several authors, who show that for dogs and rabbits the minimal lethal single dose of "Pentothal Sodium" is 35 milligrammes per kilogram of body weight. One-half of this amount will suffice to maintain complete anæsthesia for some time. For an operation lasting one hour, less than 30 milligrammes per kilogram of body weight are required, and as this will be given in divided doses, there is time for the earlier doses to be destroyed before the later ones are administered. Moreover, as 3·0 milligrammes per kilogram are usually sufficient for induction, and as the subsequent dose will be at the rate of only 1·0 milligramme per kilogram, a wide margin of safety is afforded from all these factors.

Considerable investigation on the pharmacology of "Pentothal Sodium" has been carried out by many observers. Agreement is unanimous as to its rapid action and its safety; it is also not disputed that in the vast majority of cases it is sufficiently[12] potent to give adequate relaxation, and that one of the characteristic features of "Pentothal Sodium" anæsthesia is the smooth, easy, rapid recovery. Influence on the circulatory system evidenced by alterations in the pulse rate, blood pressure, and electrocardiographic curve is minimal; but the temporary anoxæmia during anæsthesia may cause the appearance of ectopic beats.[11]

On the respiratory system it acts as a depressant. Distressing spasm of the laryngeal and bronchial musculature may arise, because it induces hyperactivity of the parasympathetic system. On the patient's entry into surgical anæsthesia, the respirations become shallow and quiet and cease to be a helpful gauge of depth except as anæsthesia lightens. The shallowness of respiration causes enough anoxæmia to produce mild cyanosis; but recovery from each of the divided doses is so rapid that this tendency does not progress to an alarming degree except when too large a dosage is employed. The use of

oxygen continuously as an adjuvant allows for a greater depth of anæsthesia and for operations of long duration. If oxygen is not available, this depressant effect on the respiratory system must be kept in mind in undertaking operations in which depth of anæsthesia for an hour or more is anticipated. In such cases the selection of another agent must be considered.

"Pentothal Sodium" seems to have no effect on the renal function, and no change in the blood chemistry relationships has been reported as due to it. In diabetes it is one of the agents of choice, owing to its lack of any harmful effect. Difference in opinion has been expressed in regard to the effect of "Pentothal Sodium" on liver function. Ravdin[13] points out that anoxæmia incident to anæsthesia with any agent may result in demonstrable liver damage, and that therefore it is difficult to assess the responsibility of any particular agent with respect to the production of liver damage apart from that produced by anoxæmia. "Pentothal Sodium" contains sulphur; therefore, it occurred to many workers that there might be danger associated with its use for subjects receiving one of the sulphonamides. Some of the earlier writers considered that the synergistic action of the two drugs precluded their use in combination; but later articles indicate that these fears were unfounded. Pender and Lundy quote the work of Nosworthy,[14] and of Smith,[15] both of whom found no harmful effects from the use of the two drugs in combination.

The necessary equipment and method of administration are simple. Pre-anæsthetic sedation is important and must not be omitted. Most of the battle casualties will have received morphine sufficiently recently for it to be still effective, but if not, a moderate dose of morphine and a full dose of atropine should be given. A full dose of atropine is indicated to control the secretions and to counteract parasympathetic hyperactivity. The original technique calls for the injection of a 5% solution in distilled water at the rate of one cubic centimetre in five seconds, the patient counting during the injection. When the patient stops counting the amount injected is noted and half as much again is then injected at the same rate. Phillips[9] and Searles[7] recommend that a 2·5% solution be used. The advantage claimed for the weaker solution is that after anæsthesia has been induced only small doses of the agent are required, and that as a result with the weaker solution greater accuracy of dosage is more easily obtained. Phillips,[9] among others, suggests a variation of the rate and size of dosage; but whichever solution and method are adopted, all techniques include the counting method to indicate loss of consciousness, and a pause before the operation is begun after tests for sensation have been made. In surgical anæsthesia the respirations will be shallow; the chin must be kept up and a good open airway maintained. Slight movements, frowning and swallowing[12] indicate that anæsthesia is becoming lighter and that another injection is required. When oxygen is at hand, it should be used for all patients who will require deep or prolonged anæsthesia. Too deep anæsthesia will be shown by imperceptible respiration and cyanosis. Usually cessation of administration will allow the patient to return from this dangerous depth; but if he does not do so promptly, respiratory stimulation is urgently needed, with artificial respiration and the administration of oxygen and carbon dioxide, either by themselves or in conjunction with one of the drugs such as "Coramine", "Cardiazol" or picrotoxin. In the ordinary course of satisfactory anæsthesia, proper control of the patient can be maintained by the administration of 25 milligrammes of the drug at such intervals as will be indicated by evidence of lightening anæsthesia.

The advantages that can be ascribed to "Pentothal Sodium"[6] as an anæsthetic agent for advanced operating units in particular, but also for the base hospital, are so definite that Marshall considers its discovery as nearly on a par with the discoveries of the value of the sulphonamides and of dried serum and plasma. These advantages are its rapid action and the easy recovery from anæsthesia without vomiting, headache or sweating. It is potent and provides adequate relaxation for a high percentage of operations, particularly in the forward area, where many of the operations will be provisional in nature and not radical. It has a low level of toxicity, which when oxygen is available sinks almost to the vanishing point, and moreover it may be used safely in conjunction with the sulphonamides. In the presence of moderate shock it possesses the virtues of all barbiturates and is perhaps the best and safest agent, and moreover, the moderately shocked subject requires smaller doses. For the advanced areas it also has the physical advantages of small bulk and simple equipment for administration, so that large amounts can be carried; it is not inflammable, and being stable chemically, it does not deteriorate readily.

The contraindications to the use of "Pentothal Sodium" are but few. Impaired pulmonary ventilation and respiratory obstruction are contraindications, because of the danger of laryngeal or bronchial spasm through parasympathetic hyperactivity. It is, therefore, not indicated in sucking wounds of the chest, in lung conditions, in heart disease, in marked abdominal distension, in neck abscesses when artificial airways are used, and in cases in which mucus or fluids may accumulate in the pharynx. In long operations, in addition to the danger of anoxæmia, there is also the possibility that clotting may occur in the needle, and a long post-operative narcosis may lead to pulmonary complications. In cases in which the operation must be performed with the patient in a difficult posture, the veins may be compressed, with consequent interference with proper injection of the agent, or they may be hard to locate. Although the fall in blood pressure with "Pentothal Sodium" is ordinarily of small moment, in cases of high intracranial pressure a slight fall may cause serious cerebral anæmia.

## Conclusion.

In conclusion there are three points that seem worthy of emphasis:

1. Modern scientific anæsthesia has reached the stage at which all those who administer the great variety of agents available should have a thorough comprehensive training in this specialty, and experience in many centres with a definite plan for such training of medical graduates demonstrates that this is feasible and successful.

2. The specialty of anæsthesia should be seriously considered by women doctors as being one in which they can achieve particular success.

3. "Pentothal Sodium", given intravenously, is an anæsthetic agent of the greatest importance and will continue to be the agent of choice for a wide variety of operations,[11] particularly in the advanced areas, until superseded by a better one.

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# UTERINE PROLAPSE: CHANGING VIEWPOINTS IN REGARD TO ITS ÆTIOLOGY AND TREATMENT.[1]

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OUR conception of the ætiology and treatment of uterine prolapse has undergone considerable change within recent years. This paper does not purport in any way to be a comprehensive review of these changes; it is merely a brief summary of what has taken place, after a review of the literature of the subject has been given, and it embodies experiences gained whilst the writer was abroad in 1938. It is divided into two parts—ætiology and treatment.

## Ætiological Factors Concerned in Uterine Prolapse.

In earlier years it was laid down that obstetric laceration and trauma held pride of place as the one great predisposing cause of uterine prolapse. Congenital weaknesses of the pelvic floor and uterine supports were also recognized as factors of lesser importance, and it was taught that the condition, once begun, was aggravated by any continuous or recurrent type of abdominal pressure. Among the latter were instanced chronic cough, laborious occupation, the weight of pelvic tumours *et cetera*.

This conception as to ætiology has largely changed of recent years. We now realize that far greater stress should be laid upon the importance of asthenic states and on ill health and malaise resulting in loss of the tone of the ligaments and tissues of the pelvis, than upon obstetric trauma. Often, of course, both factors enter into the ætiology—antecedent obstetric trauma, and later asthenia. It is a pertinent fact that the great majority of women commence to suffer from prolapse at or around the time of the menopause. At this time of her life a women's pelvic tissues become slack and begin to offer less support for the contents of the pelvis. Many of these women have actually had moderate or severe lacerations during parturition, often many years before; but the prolapse has not appeared till the time of the menopause. A complete perineal tear, even when unrepaired, in many instances does not result in prolapse, and the explanation is simple. After such a tear the woman exercises her *levator ani* muscles continuously and excessively, in an attempt to attain some sphincteric control over her rectum. In doing so she is preventing the development of an atonia of the muscles and ligaments of the pelvic floor, so tending to prevent prolapse. And, conversely, prolapse is not uncommonly seen at the menopause in virgins of the asthenic type.

Prolapse following childbirth is also recognized nowadays to be due just as much to the softened and relaxed state of the uterine supports, as to any definite laceration occurring at the time of delivery. It is interesting to note that the prevailing opinion at Queen Charlotte's Hospital, London, when I was there, was that it was wrong to allow a woman to continue in labour for long periods, in the hope of preventing a perineal tear. It was far better, it was argued, for a tear to occur reasonably early and to be sewn up, or for an episiotomy to be performed, than for labour to drag on, hour after hour, causing irreparable stretching of structures, the tone of which could perhaps never again be regained. Such atonia of these structures would surely sooner or later result in prolapse. A torn, but functionally intact, healthy muscle or ligament, properly sutured, would never predispose the uterus to prolapse.

A typical example of prolapse is the case of the woman who has had two, three or four pregnancies, the last occurring at about the age of thirty years. Apart from slight perineal relaxation occasioning her no inconvenience, she carries on till the time of the menopause, or till a serious illness occurs, or quite often, till she reaches an advanced age. Her tissues then become atonic, the ligaments of the pelvis slacken, and a third degree prolapse develops. Such cases are extremely common.

To summarize, therefore, the ætiological factor, it may be said that opinion during recent years is tending to move away from obstetric trauma and laceration as the principal causative factor in prolapse of the uterus. Whilst its predisposing significance is still recognized, our ideas as to the ætiology are moving more and more in the direction of asthenic states caused by such conditions as ill health, advancing age and menopausal atony of the tissues, with their resultant relaxing effects upon all the structures concerned in the support of the pelvic organs.

## Treatment of Uterine Prolapse.

### *Treatment by Pessaries.*

The modern trend in the treatment of prolapse is to use pessaries less and less in proportion as the refinements of surgery become more advanced. For example, at this hospital within recent years a fairly large number of elderly and even senile women have been relieved of their condition by a simple triangular modification of the Le Fort operation performed with only morphine and atropine as a preliminary narcotic. No anæsthesia is used at the actual operation. Very rarely do the patients remember anything afterwards, and shock is minimal.

The pessaries in actual use at the present time are limited almost exclusively to the ring type for prolapse, and the Hodge-Smith type for retroversion. The rigid type of narrower ring pessary, usually made of vulcanite, is favoured by some in preference to the rubber type. These were used exclusively at the British Post-Graduate School in 1938. The advantages claimed are that they do not perish, that they retain the discharges to a lesser degree, and that, being rigid, they tend to stay in position better. However, after six years of out-patient experience, I still use the flexible rubber (watch-spring) type. I cannot convince myself that the slight added advantages claimed for the rigid vulcanite type outweigh the difficulty and pain caused by their insertion in a great proportion of cases. Such contraptions as the Napier cup and stem pessary, the air-ball pessary and others, are hardly ever encountered nowadays. I did once see a woman who had worn a cup and stem pessary for a considerable time and was still wearing it. She had, as a result, a large decubitus ulcer of the cervix, which at first was thought to be a malignant condition.

Gellhorn, of Washington, has, however, designed a pessary made of non-irritating vulcanite and shaped like a mushroom. This pessary, theoretically, appears to have decided advantages, particularly for elderly women with advanced prolapse, who are poor "surgical risks". The pessary is removed by the patient at night and reinserted by herself next morning. The stem of the pessary lies downwards in the vagina and keeps the upper horizontal portion in proper position. The vagina is douched daily whilst the pessary is out. The writer cannot claim to have had any clinical experience of this pessary.

It is imperative to insist that any woman who has had any type of pessary inserted should be instructed to have it changed every two or three months, and not to omit a simple douche every day.

I recently saw, in the out-patient department, a woman who had worn a solid rubber pessary for fourteen months without having had one douche or having had the pessary changed. The pessary, on removal, was hardly recognizable as such; the resultant ulceration of the vagina was extreme, and the discharge and odour were abominable. After seven weeks of cleansing and astringent douches, it has not yet been possible to insert another pessary. The patient said that when her doctor had inserted the pessary originally he had issued no instructions, and she "presumed it was there for good".

### *Surgical Treatment.*

Our changing viewpoint with regard to surgical treatment has taken certain definite trends: (i) the general shifting of the operative field from the abdomen to the perineum; (ii) the development of numerous surgical

[1] Modified from a paper read at a clinical meeting of the staff of the Mater Misericordiæ General Hospital, North Sydney, in 1940.

procedures, each specifically suited to a particular stage, type, or degree of prolapse; (iii) anæsthetic refinements, including the greater utilization of spinal, local, intravenous and basal narcosis (in common with the general surgical trend), particularly in perineal work.

Most of the work that I saw done in Vienna in 1938, particularly at the clinics of Wiebl and Werner, was carried out under either "Eunacon" given intravenously or spinal anæsthesia with "Percaine". Vaginal hysterectomy and abdominal procedures, even up to the Wertheim operation, were performed with these anæsthetic agents.

I may say here that on the Continent, for all gynæcological procedures, the vaginal approach appeared to be given preference over the abdominal whenever possible, particularly for the middle-aged and elderly type of patient. There is no doubt that when operations are performed through the vagina there is much less post-operative shock than after laparotomy, and the patient is infinitely more comfortable during her convalescence. This route was not found to be so much favoured in the British Isles.

Another alteration in our viewpoint is the increasing recognition of the importance of the integrity and tone of the utero-sacral and more particularly of Mackendrodt's ligaments, both in ætiology and in the operative repair of the condition. Mackendrodt's ligament, or "the cardinal ligament of the pelvis", as it is called, has now come to be regarded as of paramount importance, particularly in regard to its cervical and upper vaginal attachments. In certain surgical procedures such as the Manchester operation and the Mayo operation (which is a modification of vaginal hysterectomy in which the prolapse is corrected after removal of the uterus), these two structures enter largely into the reconstruction of the pelvic floor which takes place.

I shall later give a brief summary of the procedures now held to be most suitable for each particular type and stage of prolapse; but perhaps I may be forgiven for digressing for a moment to mention the condition of retroversion of the gravid uterus, which strictly does not come within the ambit of this paper. It may, however, be of interest to know that the treatment adopted at the British Post-Graduate School in 1938 was to do nothing about it when the condition was discovered during the first month or two of pregnancy, providing that the uterus was mobile. The woman was told to come back towards the third month unless she had any untoward symptoms. If the condition had not righted itself then, a large soft ring pessary was inserted without any attempt to replace the uterus by force, with either fingers or volsellum. This was found to correct the displacement by a process of gentle persuasion in the great majority of cases. The same procedure was followed in cases of impaction towards the fourth month of pregnancy. The Hodge-Smith type of pessary was hardly ever used.

In the surgical treatment of cystocele the modern technique of anterior colporrhaphy varies from the older one in the adoption of a more meticulous dissection of the layers forming the supports of the bladder—namely, the pubo-coccygeus muscles at the sides, and the pubo-cervical fascia and muscle in the middle—and in their separate treatment. Previously all these layers were left unidentified, and the intact vaginal flaps were united by mattress sutures of stout chromicized gut in the mid-line, the redundant portion being cut away. Now most surgeons dissect out the tissue comprising these structures from the lateral vaginal flaps as an entity, and imbricate it under the bladder with chromicized gut sutures. The bladder, previous to this, may have been purse-string sutured into place by a circular suture drawn tight and tied in the manner employed for the appendix stump.

Particular attention is to be directed to two points in the operation for repair of cystocele:

1. The cervico-vesical ligament, a band which is easily recognized above the cervix, should be completely divided; the bladder is thus allowed to be pushed well up in its lower part. Mackendrodt's ligaments should then be brought from the side of the cervix and approximated to one another and to the front of the cervix. Neglect of this detail will result in many recurrences. If colporrhaphy is part of a Manchester-Fothergill operation, failure to approximate securely these "lateral ligaments of the pelvis" to themselves and to the anterior surface of the cervix, is to overlook the central basic principle of the whole operation.

2. When incontinence of urine is present, two or three mattress sutures should be specially placed to approximate the fascia immediately below the meatus in order to support the urethra. It is important to tie these structures firmly, but not unduly tightly. If the constriction is too tight, catheterization may have to be prolonged and much pain and difficulty may be experienced following the operation. I vividly remember the time and meticulous care given to each end of the colporrhaphy wound by the great gynæcologist Werner at his clinic in Vienna. It is interesting to recall that the English gynæcologist, Stevens, in a lecture delivered in Sydney some four or five years ago, gave it as his opinion that in the repair of cystocele the foregoing refinements in technique were unnecessary. He said that he always used the older and simpler method of approximation of the undissected vaginal flaps and was perfectly satisfied with his results.

In moderate degrees of prolapse, when the uterus and adnexæ are normal, and particularly when laceration and hypertrophy of the cervix have occurred, the now well-known Manchester type of operation associated with the name of Fothergill and originally devised by Donald is the procedure of choice. Briefly, this combines an anterior colporrhaphy with a partial amputation of the cervix, usually by the method of Sturmdorf, the suturing of the lower part of both Mackendrodt's ligaments (severed or unsevered) to the front of the cervix, and the performance of colpo-perineorrhaphy. The results are usually excellent. An accompanying enterocele may also require attention. The uterus must be in an anteverted position at the completion of the operation, or failure is to be expected.

If with moderate or complete prolapse a large cystocele is present and the fascial and vaginal tissues are poor, the interposition operation of Watkins, also associated with the names of Schauta and Wertheim, is ideal. The uterus is brought through the anterior vaginal fornix and tucked away in front of the bladder between it and the vesico-vaginal layer of the endopelvic fascia. The fundus is sutured well up to the fascia just below the pubic rami. The base of the bladder rests on the posterior wall of the uterus. I saw this operation performed on numerous occasions at the Wertheim clinic (Wiebl) and at the Rudolf Spital III (Werner), in Vienna; at those clinics it is performed almost as a routine measure for prolapse after the menopause. A perineorrhaphy is usually also necessary.

If the uterus or adnexæ are diseased, or if excessive prolapse is present, the Mayo type of vaginal hysterectomy, with eversion and suturing of the remaining stumps of the round, the broad and Mackendrodt's ligaments and shortening of the utero-sacral ligaments, is ideal. There must be considerable elongation of the broad ligaments to allow the technique to be carried out. When urinary incontinence is present, the usual two or three mattress sutures should be specially placed in the fascia below the meatus. A colpo-perineorrhaphy completes the operation.

In the case of feeble, elderly women, for whom an extensive vaginal procedure is contraindicated and whose coital function has ceased, the Le Fort operation (partial colpectomy) or one of its modifications, such as Bonney's, is eminently suitable. It is easily performed under local anæsthesia or with morphine only, as previously described, and is remarkably free from shock. Total colpectomy with removal of the whole mucosa of the vagina according to the method of Dujaret and Larget is accompanied by greater shock and is hardly justified.

Dr. James Hughes, at this hospital, has performed a modification of the Le Fort type of operation successfully on a number of occasions within the last two or three years. The results, as observed afterwards in the out-patient department, demonstrate clearly the value of a procedure which seems to have recently fallen somewhat into disuse.

With regard to the indication for laparotomy in cases of prolapse, present ideas would appear to restrict it at the most to early cases of prolapse, in which retroversion and only slight cystocele and rectocele are present. In these circumstances, colporrhaphy and perineorrhaphy are accompanied by some form of shortening of the round ligaments, which may be carried out from within—for example, by the Gillian operation, by its extraperitoneal modification (Simpson) or by the Baldy-Webster operation. At this hospital, however, we prefer to use the external technique—that is, the Alexander-Adams operation—whenever it is necessary to correct retroversion, provided no such contraindications as fixity of the uterus by adhesions *et cetera* is present. It is only fair to state that there are many surgeons of repute who still prefer to perform colporperineorrhaphy combined with some form of abdominal fixation for the correction of nearly all types of prolapse, and who obtain good results. It is to be pointed out, however, that the technique employed in the Manchester-Fothergill operation corrects any tendency to subsequent retroversion and obviates the necessity for laparotomy with its added surgical risk.

Numerous procedures other than the foregoing have been devised for the cure of prolapse. Many have not stood the test of time, and have been consequently wisely relegated to the limbo of forgotten things.

Robinson gives his views regarding the operative treatment of prolapse in three sentences: (i) Prolapse can never be cured by abdominal operation alone. (ii) Prolapse can nearly always be cured by vaginal operation alone. (iii) The treatment of prolapse occasionally demands an abdominal as well as a vaginal operation.

### *Summary of Treatment.*

Treatment may therefore be summarized as follows. The modern trend is away from the use of pessaries in the direction of an enlarged operative field, which is dominated by the Manchester-Fothergill operation and the principles it involves. In this field, however, are a number of other procedures devised for the special indications of the varying types and degrees of prolapse. I think that on this subject one can do no better than quote Professor Ward, writing in a recent issue of *The Journal of Obstetrics and Gynæcology of the British Empire*. He states that "the most successful surgeon in the cure of genital prolapse will be he who, with wide knowledge of all the procedures at his command, chooses the one which will be best suited to the individual case".

### Acknowledgement.

I desire to acknowledge the help and advice given over many years by Dr. James Hughes, honorary gynæcologist and obstetrician to the Mater Misericordiæ General Hospital. Many of his ideas and principles are embodied directly or indirectly in the substance of this paper.

## OBSERVATIONS ON SUB-TERTIAN MALARIA.

By AUSTIN D. CURT, M.B., B.S. (Melb.), D.T.M. and H. (Eng.), D.P.H. (Lond.),
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THIS article describes some aspects of sub-tertian malaria as seen in European patients in the tropics. I have been engaged for the last twelve years in the practice of medicine in the Gold Coast Colony and Ashanti (British West Africa). During this period I have studied all available literature and missed no opportunity of discussing with other practitioners the difficult problem of sub-tertian malaria. The following will describe some of the apparent characteristics of this protean malarial infection.

### Clinical Manifestations.

Sub-tertian malaria (synonyms: pernicious malaria, malignant malaria) is found as the predominant type in tropical and some sub-tropical climates. It is prevalent in New Guinea and in the East Indian Islands. It is the only type of malaria associated with blackwater fever.

Sub-tertian malaria is the main killing type of malaria, though benign tertian and quartan malaria may kill large numbers if the population is undernourished; for example, 80,000 deaths from benign tertian malaria occurred in a few months in Ceylon during the period 1934-1935. Sub-tertian malarial infections follow no rules; the patient may be very ill; he may be jaundiced and cachectic.

Practically any clinical phenomena may occur. This is due to the fact that the infected corpuscles tend to clump together and adhere to the walls of vessels, so vessels may be plugged or the normal supply of blood interfered with. Or, on the other hand, the patient may be not ill at all in the accepted sense. He may visit the physician for a tonic. He may feel "not as fit as usual". Slight but persistent headache may be his only complaint, or perhaps it is that he is not able to concentrate. His temperature may simulate practically any type of temperature. He may show a more or less continuous fever resembling typhoid fever or a type resembling a "septic" fever; or at the other extreme, he may show very little or no fever at all.

The degree of immunity developed and the prophylactic use of quinine influence the temperature and clinical findings.

Few patients have rigors, and these are of not severe type.

### Diagnosis.

Fortunately, although a full knowledge of sub-tertian malaria may not be gained in a year, or for that matter in twelve years, there is a method of diagnosis that offers protection to the patient and comfort to the physician. This is the taking and examination of blood slides. From my experience I consider it criminal negligence to omit to take blood slides from every patient who has lived in or is living in a sub-tertian malarial area. Deplorable errors will be made if this is not done. I have seen the condition diagnosed as pneumonia, typhoid fever, dysentery *et cetera*. Operation has been performed unnecessarily through neglect of this procedure.

When examining blood slides, one should not report "no parasites present"; rather one should state that no parasites were seen, and take a further series of blood slides in suspected cases.

In practice I have found thin blood slides more easy to manage. When they are stained with Romanovsky (Leishman) stain, parasites show up well. In the majority of blood films parasites will not be present in any great numbers. A hunt for them will be necessary. Frequently ten to fifteen minutes' careful search may reveal three or four parasites. This is particularly so when the patients have been taking quinine. Parasites will be difficult to find if the patient has taken twenty or thirty grains of quinine during the previous thirty-six hours.

### Treatment.

The method of treatment that I used on the west coast of Africa is as follows.

1. The patient is put to bed and remains at rest for seven days. The ingestion of copious amounts of bicarbonate of soda solution (one teaspoonful to one pint of water, not iced) is advised and encouraged.

2. The upper portion of the abdominal tract and the upper abdominal organs are relieved by the administration of calomel (three grains), followed in eight hours by a saline draught. If calomel is too distressing, replace it by magnesium or sodium sulphate until good drainage is established.

3. Quinine is given in liquid form as *Mistura Quininæ Sulphatis* (quinine sulphate or hydrochloride or bihydrochloride, five grains to half a fluid ounce of water) every four hours during the first five days, and then the dosage is decreased to three times a day for two days. The patient is then allowed up, and he continues to take a five-grain

dose of quinine morning and evening for one month. If he is in a malarial area, he then resumes his prophylactic dose of quinine (five grains a day). In practice, it is advantageous to give the quinine during treatment with or immediately before a morsel of biscuit or bread and butter with a warm drink.

4. Discomfort, headache and backache may be relieved by the administration of an "A.P.C." powder (aspirin and phenacetin, of each five grains; caffeine citrate, two grains). The dose may be repeated in four hours if necessary.

5. While the patient is under control, it is well to make sure that no other defects are present—for example, worm infestations, anæmia.

Examinations of a centrifuged deposit of the urine and of stools should be made.

Blood counts are valuable. Malarial blood deficiences respond well to treatment with "Campolin" (Bayer Pharma) given intramuscularly; two cubic centimetres are given every day for a few days, followed by a depot injection of ten cubic centimetres.

In my experience no European patient developed blackwater fever. Immediate relapse was not noted; indeed, the relapse rate was very low, and those few patients who appeared to relapse may possibly have developed fresh infections by reason of omitting to take their prophylactic dose of quinine.

### Discussion.

It is not claimed that the modified treatment indicated in this paper will eliminate the infection; but it will put the patient on his feet and allow him to resume his work in comfort.

In practice, in my opinion, if the subject is continuing to live in a sub-tertian malarial area, the foregoing is the most satisfactory method of handling sub-tertian infections. I do not consider that longer periods of treatment or heavier dosage with quinine will be of greater advantage. In point of fact, quinine in heavier dosage may prove dangerous. I have lived for years in the same area as many patients, and that is my conclusion.

Sub-tertian malaria is not long maintained in the system; it is present for probably nine to eighteen months. If the subject is leaving a sub-tertian malarial area, never to return, then it may be considered justifiable to employ the synthetic drugs—"Atebrin" and "Plasmoquine"—in an attempt to eliminate the infection.

### Summary.

1. Sub-tertian malaria in the field produces many and varied clinical phenomena.

2. It is imperative that medical officers and general practitioners should assure themselves by the examination of blood slides that parasites are not to be found in any patient living in or who has lived in a sub-tertian malarial area.

3. The infection may be controlled satisfactorily by conservative treatment.

4. I have offered the opinion that while subjects are continuing to reside in sub-tertian malarial areas or are returning to these areas after short leave in non-malarial areas, quinine is the drug of choice in treatment.

### Conclusions.

The foregoing deals with Europeans resident in the tropics who observe certain commonsense rules, such as the wearing of proper clothing, sleeping under mosquito nets, and taking prophylactic doses of quinine with some degree of regularity. With regard to people who, through careless living habits or through necessity (such as a rapidly moving campaign), may not observe these precautions, there is a quite different story to tell regarding treatment. This will be put down at a later date, when the problem of blackwater fever and the advisability of administering quinine to patients with heavy infections will be discussed.

## Reviews.

### MEDICAL JURISPRUDENCE AND TOXICOLOGY.

THE appearance of the seventh edition of Glaister's "Medical Jurisprudence and Toxicology" has brought up to date this well-known work.[1] In a review of a former edition it was recommended in this journal for senior students and for the fireside of qualified men. This equally applies to the present edition.

The work is arranged in the well-known manner of books on forensic medicine. In the section on identification of human remains the remarkable achievement of reconstruction is well illustrated in the famous Ruxton case and the case itself is given in some detail. The law in regard to such subjects as cremation, poisons, dangerous drugs, evidence *et cetera* is the English and Scotch law; this applies almost equally well in Australia. Toxicology is treated in a manner which will commend itself to students, as the author has shunned too much detail and analysis. The book is well printed on good paper and may be recommended with confidence to fifth year students.

### SURGICAL TREATMENT ILLUSTRATED.

"ILLUSTRATIONS OF SURGICAL TREATMENT", by Eric L. Farquharson, is a very valuable book. The second edition has appeared.[2] In the first part the chapters on intravenous infusion and transfusion have been entirely rewritten and brought up to date. While the use of the word "illustrations" in the title is useful in that it draws attention to the profuse and thorough use of series of pictures to demonstrate surgical procedures, nevertheless the text is very concise and contains much detailed information of value. This is especially true of the chapters on plasma and serum and their properties, use, methods of keeping and so on. Right through the book the details of the manœuvres described in the text are well shown in the illustrations and may be followed easily. The last third of the book is devoted to plates illustrating instruments and appliances. The list is complete and would be of great value to operating theatre staffs as well as to medical students.

### ENDOTRACHEAL ANÆSTHESIA.

"ENDOTRACHEAL ANÆSTHESIA", by Noel A. Gillespie, is a most welcome addition to the literature of anæsthesia.[3] The foreword by Magill, Waters and Guedel, the three men who have given so much to modern anæsthesia, leads the reader to expect a work of the highest standard. This expectation is fully realized as the pages of this delightfully written book are read.

After considerable experience as an anæsthetist in England, Dr. Gillespie became Research Associate and Resident in Anæsthesia at the University of Wisconsin, under Dr. Ralph Waters. He is thus familiar with the methods and ideas of both the English and American schools, and this monograph from his pen is a work written in good English, freely coloured with American terms.

The chapter on the history of the endotracheal method shows the struggle that anæsthetists have passed through in their endeavours to perfect the means to bring assistance to the surgeon and safety to the patient. In succeeding chapters the theoretical aspects of the subject receive the fullest consideration. Good illustrations, some in colour, assist towards a clear understanding of the text. A bibliography at the conclusion of each chapter is a valuable guide for further reading, and shows the diligence of the author in collecting detail.

To students of anæsthesia, this book will provide a lucid exposition of the subject. To those anæsthetists more experienced in the art, it will prove a real joy, for it is full of the gems of knowledge gained in the school of experience and presented by a master of the craft.

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[1] "Medical Jurisprudence and Toxicology", by J. Glaister, M.D., D.Sc.; Seventh Edition; 1942. Edinburgh: E. and S. Livingstone. 8½" × 5½", pp. 680, with 132 illustrations, some of which are in colour. Price: 28s. net.

[2] "Illustrations of Surgical Treatment, Instruments and Appliances", by E. L. Farquharson, M.D., F.R.C.S.E., with a foreword by Sir John Fraser, M.C., M.D., Ch.M., F.R.C.S.E.; Second Edition; 1942. Edinburgh: E. and S. Livingstone. 9½" × 6", pp. 404, with many illustrations. Price: 25s. net.

[3] "Endotracheal Anæsthesia", by Noel A. Gillespie, D.M., B.Ch., M.A. (Oxon.), D.A. (R.C.S. Eng.); 1941. Madison: The University of Wisconsin Press. 8½" × 5½", pp. 198, with illustrations. Price: $4.00.

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## SOW'S EAR, SILKEN PURSE AND METAPLASIA.

IN his well-known book, "The Conquest of Happiness", Bertrand Russell has a chapter on competition. Here he describes in a delightful way the average business man who is eternally complaining about "the struggle for life"—an inaccurate phrase which Russell declares that the commercial person has picked up to give dignity to something essentially trivial. What these people mean by the struggle for life is the struggle for success. "What people fear when they engage in the struggle is not that they will fail to get their breakfast next morning, but that they will fail to outshine their neighbours." Russell draws a realistic picture of this type of man. This man knows little about his wife and children, because he spends his week days in the office and his Sundays on the golf links. His wife is asleep when he leaves home in the morning and he and she are much too "social" for intimate conversation in the evening. "He has probably no men friends who are important to him, although he has a number with whom he affects a geniality that he wishes he felt. Of springtime and harvest he knows only as they affect the market; foreign countries he has probably seen, but with eyes of utter boredom. Books seem to him futile, and music highbrow. Year by year he grows more lonely; his attention grows more concentrated, and his life outside business more desiccated." Here are the foundations of a parable, and most of us probably know men to whom Russell's word picture would apply. There are people who admit quite freely that they are trained from childhood in the art of getting on in the world as individuals. Some of them take it for granted that everyone else has been similarly schooled. Those who have this avowed object are presumably happy, or shall we say content, at least for the time being, if they achieve some social or financial prominence. They are the product of their schooling, of the direction in which their minds have taken them. It is quite true, as has often been said, that each man has his own peculiar cast of mind, and it is also true that each mind has its own method. To study this matter objectively in relation to the position in which Australian medicine finds itself today, may be useful, not that we should approach it with a mind "conscious of its own rectitude", but because, as Emerson puts it, "other men are lenses through which we read our own minds".

Russell's business man, in the hey-day of his ill-balanced and plethoric life, is, though he knows it not, a pitiable creature. His mind is probably alert and keen; nothing in his line of business will get past him and not one of his competitors may be able to "put it over" him. But when we compare him with the man living perhaps next door who has not stayed in a groove and spent his life time and energy to be efficient in that groove, the man who takes the whole of life as his chess-board and all human experience as his playing pieces, the difference is clear to those with any discernment. It must not be supposed that a desire to "get on" is to be looked on as an unworthy quality. Ambition is to be admired and generally speaking is in certain degree necessary. But the point need not be laboured; most of us know that perspective and a sense of true values are indispensible to the full life of a citizen of the universe. The full life will be possible to such an individual because of his well-stored mind, a possession that may be likened to the silken purse of proverbial fame. If we take up this simile, then we can credit our business devotee with a mind that has the texture of a sow's ear. We make this comparison deliberately because we wish shortly to contend that, the old proverb notwithstanding, it should be possible in our medical plannings for the mind that we have likened to a sow's ear to undergo a fundamental change, a kind of mental metaplasia, and emerge with the endowments of a silken purse. We all know that the result of any man's efforts or undertakings will depend very largely on the mental equipment that he brings to his ventures. It does not matter whether work or play is in question. By and large the value of a man's work will depend on the conception that he has of his duty in regard to it, on his understanding of its nature and significance and perhaps on the perception that he has of its relationship to other undertakings, as well as on his general ability and technical skill. Also if a man is to profit from pleasure or relaxation he must display some intelligence in what he is doing. In other words a man must give out from their store some of his mental reserves—and he cannot give what he does not possess. Russell's business man would be successful as some persons count success. He would give unbounded energy to the making of money and make it he would. But he would make it at the expense of other persons—he would give energy to money-making because he had plenty to give; he would care naught for his competitors or his other fellow men because he would be devoid of human understanding and sympathy. Send the same man on a holiday tour of Europe (the pre-war Europe) at the all too eager heels of his parasitic family and his plaint would be one of boredom as he moved from one fashionable first class hotel to another and scanned every morning in specially imported papers the latest transactions on the stock exchange. He would care nothing for the manner of living of the people through whose midst he was passing; he would not delve into their history,

their folk lore and their customs; he would almost certainly neglect the wine of the country, preferring his whisky and soda. The pictures and sculpture centres such as Paris, Florence and Rome would mean nothing to him and a performance of "Parsifal" at Bayreuth would be agony indescribable. He could bring nothing to these high halls of feasting and would assuredly take nothing away with him. We need not try to assess the delights that "the man living next door" would experience in such circumstances. Minds are sometimes allowed to run in a groove through carelessness, sometimes the choice of groove is deliberate, and in either case the habit may be so fixed that even the greatest upheaval will bring about no change. A mind may go to sleep, undergo a kind of hibernation, from which it will emerge in due course, to pick up the threads of life again, perhaps with a new zest and maybe even in a way different from that known before. But man has a free will and if he has any strength of character he should be able to direct his mind and project his energies along new grooves and new paths of his own deliberate choice. A receptive mind, it will be granted, is generally a gift, but receptivity can be cultivated if a determined effort is made. This means that by a kind of mental metaplasia the sow's ear may change into a silken purse.

Let us apply these thoughts to medicine, especially to the talk about the future that is taking place all around us today. We have evidence that there exist minds of the sow's ear quality, those of persons who are concerned with getting on in the world as individuals and with no other consideration. They are liable to become vociferous in the extreme if any suggestion is made that would appear to them to prejudice their "getting on". If they are frankly seekers of wealth they are more easily dealt with than when they assume a false altruistic cloak, and certainly more estimable. The pseudo-altruist generally gives himself away by his over-emphasis and his vehemence. Apart from the large number of hibernators, there is also evidence that there are among the members of the medical profession many whose minds are of a finer, more silk-like, quality. In the present discussions on what form the medical practice of the future shall take there are so many mixed motives and there is so much real misunderstanding, that, pursuing our sow's ear and silken purse metaphor, we are forced to recognize many grades of texture, something like all stages of a metaplasia. The mind that will reach the wisest decision in the present discussions is the one which is free from prejudice, recognizes the needs of the community, upholds the ethical traditions of medicine, does not regard money as the be-all and end-all of existence, and has generous thoughts about those who hold opposing views. It is on generosity of mind that final emphasis must be laid. If, as already quoted, other men are lenses through which we may read our own minds, let us regard others from this point of view, aiming the while at our own mental metaplasia. And let us cultivate generous minds. By no means seldom are ignoble motives attributed to advocates of a particular type of practice. If each man will only allow that his opponent is sincere in his beliefs and is not actuated by unworthy motives, and if at the same time he undertakes a little self-examination, the outcome of the present discussions will bring credit on Australian medicine and benefit to the Australian people.

# Current Comment.

## THE TREATMENT OF CHRONIC ALCOHOLISM.

IN September, 1940, prominence was given in these columns to a communication by Walter L. Voegtlin in which he described his method of treating chronic alcoholism by the induction of nausea. The drug used by him to produce nausea was emetine, and pilocarpine and ephedrine were given as well. The treatment, which by the way is not without risk, is so carefully planned that just before the emetine produces nausea, the patient is diligently plied with alcohol. Warm water is also given freely to make emesis easy and to prevent retching. The idea behind this form of treatment is that the patient develops a great aversion to the sight and smell of alcohol—he acquires a conditioned reflex. Several treatments are given over a period of a week or ten days and it has also been Voegtlin's custom to reinforce this reflex aversion periodically by giving treatments at intervals of one to three months throughout the first year. In his article in 1940 Voegtlin reported that six months after treatment 97·3% of his patients were still abstainers, but that at the end of a further period of six months the percentage had fallen to 65·7. In company with Frederick Lemere, W. R. Broz, P. O'Hollaren and W. E. Tupper, Voegtlin has now reviewed six years' experience with this treatment;[1] the number of patients covered by the review is 1,526.

These authors (Lemere is apparently the senior author) begin their review with the remark that excessive drinking is a disease in that the patient has an abnormal reaction to alcohol not shared by the normal drinker. "As soon as alcohol starts circulating in the blood of the alcoholic addict there develops a change in personality and judgment not found in the controlled drinker." There is often an inherited constitutional predisposition to intolerance to alcohol. These authors found excessive drinking in the family background of the alcoholic addict four times as often as in that of the normal drinker. They do not define a "normal" drinker, but it must be presumed that such a person is one who is not an addict, or does not drink to excess—one who has no abnormal reaction to alcohol. The question of definition is difficult and offers scope for argument; since most medical practitioners know what is meant by excessive drinking, definitions need not be discussed further. The number of patients in the series under review was 1,826, and accurate follow-up records were obtained in regard to 1,194 of these. Of 644 patients treated within the last two years 74·8% are still abstinent; of 291 patients treated from two to four years ago 52·5% are still abstinent; and of 259 patients treated four or more years ago 51·5% are still abstinent. The patients most difficult to treat included those under thirty years of age, professional men (especially doctors) and women; the reason given for this is that drinking by these persons represents a more severe break from normal behaviour than drinking by the average patient. Lemere and his fellow workers express the opinion that this form of treatment is the best available; and the advantages that they claim for it are its short duration, its wide applicability and its ready acceptance by patients who really want to stop drinking. This last statement, of course, lies at the root of the matter, for no treatment of chronic alcoholism is at all likely to be effective unless the addict really wishes to recover from his addiction. In this regard it should be noted that although most of the patients treated by Lemere and his fellow workers came to them of their own accord, those who came under the duress of their families, their employers or the courts, did almost as well as the voluntary patients, provided they saw the light and had "a change of heart" after starting treatment.

In the same journal as that in which the paper by Lemere and his co-workers is published, is another by Michael M. Miller. This author reports results obtained

[1] *The Journal of the American Medical Association*, September 26, 1942.

by him in chronic alcoholism after the administration of amphetamine (benzedrine) sulphate. In spite of our previous unwillingness to devote much discussion to definitions, it may be noted that Miller defines chronic alcoholism as the use of alcohol by an individual to such an extent as to create a medical or social problem for him or society. Though a greater part of Miller's paper and most of his conclusions refer to the drug, amphetamine sulphate, his treatment has a triple basis: medical treatment, psychotherapy, social reorientation and rehabilitation. Miller has treated 513 patients and observed them over periods ranging from four to fourteen months. Of this group 487 were "contacted" and it was found that 397 of them, or 81·4%, were abstinent. A comparison was made between 167 ambulatory patients who had been observed for a period of nine months and a control group of untreated subjects of the same number. It was found that 25% of the treated group and 42% of the control group were rearrested—the actual figures were 46 and 191. In regard to Miller's treatment, it must suffice to state that the patient received five to ten milligrammes of the drug after breakfast and after luncheon. No drug was given within the eight-hour period before the patient went to bed. No attempt will be made to compare the value of the emetine treatment of Lemere with that of the amphetamine sulphate. Before this could be done it would be necessary to have full details of the types of patients in the two groups reported. For example, R. V. Selyer pointed out in the discussion on Lemere's paper that we have to deal with many types of alcoholic, including the neurotic, psychotic, situational, maladjusted and feeble-minded types. Treatment of the kind under discussion no doubt has a place in our therapeutic equipment, but most to be desired is the method in which the patient is taught to help himself, as when he belongs to something like the "alcoholics anonymous" group. The greatest emphasis should, of course, be laid on prevention and not cure.

## ILLUMINATION AND GONADAL RESPONSE.

THE discovery that insolation or exposure to short-wave radiation, originally employed for superficial skin conditions, could have far-reaching effects on metabolism naturally occasioned surprise. When subsequently it was shown that a sterol in the skin could be changed by ultra-violet rays into vitamin *D* and with important consequences to the growth and mineralization of bone, a hormonal mechanism of the remote actions of irradiation was suggested. Later research, however, clearly showed that the central nervous system must be brought into consideration. Quite a literature has sprung up on the effects of incident light on various organs of the body and particularly the gonads. One of the most recent investigations on this topic has been carried out in the Department of Zoology in the University of Minnesota.[1] The common sparrow was chosen for the experiments and males and females were subjected to continuous red and also to continuous green light with, of course, the proper controls. In ordinary conditions the male sparrow shows testicular shrinking and complete absence of spermatogenic function in late autumn and winter, but with the advent of spring the male gonads enlarge and become active. In this research it was demonstrated beyond all possibility of doubt that exposure of the male sparrow in winter to twenty-eight days of red light brought on testicular changes similar to those which develop spontaneously in spring time. Two remarkable features about this response were revealed: one that the female is much less affected, and secondly, that red light is "vastly more stimulating" than green. That red light, the least actinic of the spectral colours, should give a notably greater stimulation than the more chemically potent green suggests that the response is not hormonal, but that stimulation passes through the eye to the hypothalamus and so to the anterior pituitary. It was a triumph of photography when red light was made chemically active in the camera, but Nature many thousands of years ago elaborated a similar optico-chemical device, and if anything overdid it, for red, the weakest of the spectral lights from the actinic standpoint, is classified by the perceptive faculties as the "loudest" in the whole range of colour sensation.

Some fifty years ago the late Sir Edward Sharpey-Schafer in a brief article made the suggestion that the reason for migration in birds is the desire for extended daylight. This action of continuous light on the gonads, recently discovered, has, one would think, some relation to the gonadal cycle in those many birds which by north-south migration enjoy two summers in the year. The lesser response of the female brings up interesting problems not so easily solved. As an example of the care which must be taken in such experiments to avoid wrong inductions there is the fully confirmed observation that the starling in London begins mating some weeks before the country starling. This is hardly to be attributed to city rakishness, but to some physical factor, and it has been suggested that wakefulness arising from nocturnal traffic is the cause.[1] Another suggestion put forward is that racial differences may be operative, but it is difficult to see why metropolitan birds should be a special type. One would wish that similar investigations were undertaken with animals nearer to the human being, for it is impossible to escape the projection of this response of birds on to problems of human behaviour. Is the high insolation of Australia compared with Nordic Europe in any way associated with gonadal reaction? There is also the problem of the white race in the tropics.

[1] *The American Journal of Anatomy*, July, 1942.

## ERYTHROBLASTOSIS FŒTALIS.

J. L. HENDERSON[2] believes that *erythroblastosis fœtalis* is still not generally recognized. He has observed a series of 53 infants with this disease; the fact that he holds a pædiatric appointment at a maternity hospital has enabled him to observe thirty patients of the series from the time of their birth. Three forms of the disease are usually described, namely, *hydrops fœtalis*, *icterus gravis neonatorum* and congenital anæmia. To these Henderson would add a fourth type; he describes it as the fourth and worst variety of erythroblastosis, and states that the principal features found are hepatic cirrhosis and intra-uterine death. It is, of course, well known that macerated fœtuses occur in the series of tragic births found in families affected with *erythroblastosis fœtalis*. It is usually impossible to identify any structure in histological preparations made from the fœtuses as death has often occurred several weeks previously. For this reason some people hesitate to classify the fœtuses as providing examples of erythroblastosis. Most authors, however, include their condition in the category of *hydrops fœtalis*, stating that this form of the disease may cause death of the fœtus before, during or shortly after birth. On the whole this seems simpler. It is hardly necessary to describe a fourth group. The name *hydrops fœtalis* was applied first to well-marked cases in which extensive œdema was present and is not so suitable for less florid types. But this is true of all descriptive titles; most diseases vary in their intensity—in some instances all the typical features are seen, in others the manifestations are slight and some may be absent.

Henderson also believes that macerated fœtuses such as he describes are often wrongly regarded as being affected by congenital syphilis. The resemblance between erythroblastosis and congenital syphilis has been referred to by other writers. Serological tests of the mother's blood will settle the question; curiously enough Henderson places laboratory tests last in his description of the differential diagnosis in these conditions. It is impossible to agree with him here; serological tests and search for the spirochæte in fresh and fixed preparations are all-important in distinguishing the two conditions.

[1] *Proceedings of the Zoological Society of London*, Volume CVIII, 1938, page 51.

[2] *The Journal of Obstetrics and Gynæcology of the British Empire*, October, 1942.

# Abstracts from Medical Literature.

## PATHOLOGY.

### Copper and Iron of Liver and Spleen in Chronic Diseases Accompanied by Secondary Anæmia.

SINCE normal formation of hæmoglobin is dependent on adequate stores of copper and iron, it would be expected that a decreased retention of these elements would occur in anæmia. However, in a study of copper and iron storage in severe chronic diseases accompanied by secondary anæmia, Marta Sandberg, Harry Gross and Olive M. Holly (*Archives of Pathology*, June, 1942) found that not only is there no inadequate retention of these metals, but even larger than normal amounts are stored in the depot organs, the liver and the spleen. Since these large accumulations of copper and iron were observed in many chronic diseases and especially in association with cancer, it seems that a deficiency of copper or iron or both cannot be the prime or the sole determining factor responsible for anæmia. It seems rather that the power to synthesize the blood-forming elements is impaired. In such circumstances large stores of copper and iron, presumably retained for emergency purposes, can no longer function in the conversion of inorganic iron into hæmoglobin, which may explain the paradox of the excess of copper and iron in the liver and the spleen on the one hand and severe anæmia on the other. Additional factors may be toxic disturbances in protein metabolism or loss of large amounts of protein. No definite correlation could be found between the degree of nutrition and the retention of either copper or iron, except that increased retention was usually present in either the liver or the spleen in poor nutrition or anæmia. There was no rule as to which element would be retained or, if both were retained, which would be stored to a greater extent, though retention of iron was more prevalent and usually greater than that of copper. An outstanding feature, however, was the tenacity with which the liver maintained its copper content, irrespective of iron retention. While anæmia is of major importance in increased storage of copper and iron, the extent of storage is out of all proportion to the anæmia in cases of cancer and reaches its highest point in cancer with extensive metastasis. Enormous amounts of copper and iron were found in several cases of cancer in which there was no anæmia, showing that such accumulation may occur even in the absence of anæmia, with cancer as the only apparent causative factor. In some cases, by an analysis of liver and spleen alone it was possible to predict whether cancer would be found. What factor is responsible for the excessively high copper and iron contents in the liver and the spleen in cases of malignant tumour—whether accompanied by anæmia or not—is not yet clear. The huge accumulation of these metals is, however, so striking and constant that it must be considered significant. Since the formation of hæmoglobin and the maturation of blood cells are possible only in a suitable physio-chemical environment, it seems conceivable that disturbances in the oxidation reduction potential, sulphydryl metabolism and enzymatic activation make the large deposits of copper and iron unavailable.

### Fatty Changes in the Liver from Different Causes.

FATTY LIVERS obtained in cases of infectious and cachectic diseases, chronic alcoholic cirrhosis, toxæmia of pregnancy, cœliac disease, von Gierckе's disease, idiopathic hyperlipæmia and the lipidoses, including essential xanthomatosis, Gaucher's disease, Niemann-Pick and Tay-Sachs diseases, have been subjected to chemical analysis by S. J. Thannhauser and Harold Reinstein (*Archives of Pathology*, May, 1942). Whenever possible, all lipoid substances were determined. It is emphasized that dry rather than wet tissue should be employed for lipoid analyses. The obviation of technical difficulties by the use of the former tissue insures more uniform and comparable results. It is believed to be possible by analytical partition of the lipoids to differentiate between fatty infiltration and fatty degeneration. In cases of the former, values for hepatic neutral fat were found to be elevated, and, although cholesterol and phospholipoids were relatively low, their mutual proportions were maintained. In cases of the latter condition, however, the increase of neutral fat is less marked, the chief change being an alteration of the proportion between the cholesterol and other lipoids. For the most part, simple fatty degeneration of the liver is quite uncommon (toxæmia of pregnancy). More frequently, one encounters fatty livers whose pathologic alteration involves both fatty infiltration and degeneration. In cases in which one is more prominent than the other, chemical examination should often enable differentiation to be made. The suggestion has been made by other investigators that a fat regulatory mechanism exists (perhaps hormonal) which gives protection against fatty infiltration of the liver. The observation that certain types of hyperlipæmia occur without consequent infiltration of the liver, in the author's opinion, lends support to this hypothesis. Liver obtained in a case of Tay-Sachs disease was examined. Formerly believed to be related to Niemann-Pick disease, this condition was shown on analysis to have no relation to a metabolic disturbance of the lipoids. The simple fatty infiltration found was similar to that occasionally encountered in the various types of general cachexia.

### Malignant Tumours of Synovial Origin.

UNDER the heading of synovial sarcomesothelioma (sarcoendothelioma), H. Russell Fisher (*The American Journal of Pathology*, May, 1942) describes a small group of malignant tumours of the synovial membrane, the common feature of which is, according to him, a bimorphic cellular constituency. This tumour has been given many names, including synovioma (Smith) and synovial sarcoendothelioma (Wegelin). Two such tumours are here reported. One of them exhibits recurrent growth and pulmonary metastases which retain the bimorphic microscopic appearance. From a review of the literature, 43 previously reported cases have been collected. The clinical and pathological features of this series of tumours are analysed. The origin and nature of the tumour are discussed and, as a compromise between usage and histogenesis, the name synovial sarcomesothelioma is proposed. The salient features of the tumour are: that the tumour occurs with equal frequency at any age after puberty, it is found equally in both sexes and it springs from joint capsule, bursa and tendon sheath locations, most frequently in the region of the knee joint. Its initial clinical feature is usually swelling, but pain is the first symptom in one-third of the cases. The original rate of growth can be very slow. Gross examination of the tumour usually has not suggested its nature. Synovial sarcomesothelioma should be suspected if a grey-white tumour from an appropriate location contains small cysts or clefts. The primary tumour contains both epithelial-like and sarcomatous cellular features; these may be retained in metastases, or metastases may be purely sarcomatous. This tumour is malignant, recurs after local removal, and metastases occur particularly in the lungs. There are no reports of such a malignant tumour completing its life history without surgical intervention.

CRENSHAW D. BRIGGS (*Annals of Surgery*, March, 1942), however, does not stress the bimorphic cellular constituency. He reports a series of nine cases, all of which have arisen from the inner or synovial lining of a joint's capsule. While his descriptions of the tumour and his photographs very closely resemble those of Fisher, he interprets the stroma cells as fibroblastic and not as sarcomatous. With regard to the ultimate outcome, Briggs agrees with Fisher that the tumours are malignant, recurring after local removal, and may lead to metastases in the lungs.

### Composition of the Liver.

A SPECIMEN of human liver removed for biopsy during a surgical operation is necessarily small and comes from the more accessible part of the organ. When chemical analyses are performed on such a specimen, the significance of the data obtained depends on the degree to which the tissue studied can be taken as representative of the whole. G. M. Bourke and J. D. Stewart (*Archives of Pathology*, May, 1942) have for some time made biochemical studies of hepatic tissue removed at operation under varying conditions, and proper interpretation of the results required some knowledge of whether fair samples were obtained by this technique. They therefore studied hepatic tissue from twelve patients who died of various diseases. Samples comparable in size to those safely removable at operation, that is, one to two grammes, were taken from the following sites: (*a*) anterior margin of the right lobe, (*b*) posterior margin of the right lobe, (*c*) centre of the right lobe, (*d*) anterior margin of the left lobe, (*e*) posterior margin of the left lobe. The results of this examination indicate that different parts of the liver show at autopsy a fairly high uniformity of composition with respect to water con-

tent, fatty acids and free and total cholesterol. The distribution of vitamin *A* is more uneven, but this finding may be due largely to the inadequacy of the analytical method.

## MORPHOLOGY.

### Origin of Vagal Ganglia and Parasympathetic Ganglia of the Visceral Plexuses.

D. S. JONES (*Anatomical Record*, February, 1942) states that after removal of the hindbrain in forty-two-hour chick embryos, the cardiac, pulmonary, œsophageal, gastric and upper intestinal plexuses failed to develop. This indicates that these plexuses are formed by neuroblasts which migrate from the hindbrain. When the caudal end of the neural tube was removed from forty-eight-hour chick embryos, the ganglia of the colon failed to develop, which indicates that the lower end of the digestive tube is supplied with neuroblasts from the sacral cord. Thus the parasympathetic ganglia are cranio-sacral in origin as well as in function. Removal of the cephalic neural crest prevents the formation of the jugular ganglion of the vagus, but does not interfere with the development of the nodose ganglion. The only operation which eliminated the nodose ganglion was the removal of the third branchial pouch as evidenced by a lack of the thymus on the operated side. Subsequent studies of normal embryos showed that the nodose ganglion arises from the dorsal side of the third pharyngeal pouch and the adjacent ectoderm. The first and second pouches similarly contribute to the geniculate ganglion of the seventh and the petrosal ganglion of the ninth nerve.

### Nerve Grafts.

F. K. SANDERS AND J. Z. YOUNG (*The Journal of Anatomy*, January, 1942) describe a series of experiments which represent an attempt to compare the efficiency of the following types of nerve graft, namely, fresh autografts, pre-degenerated autografts, fresh homografts, homografts stored in Ringer's solution at 2° C., fresh heterografts, dead homografts stored in alcohol, dead heterografts of alcohol-preserved spinal cord. The authors state that this study of the early fate of grafts shows that in the rabbit autografted nervous tissue can survive, with degeneration and proliferation of Schwann cells, making a good basis for recovery. Homografts can also do so, but in some cases set up reactions. These reactions are reduced by previous storage of the graft. Heterografts set up a very great reaction and do not degenerate. They and alcohol-fixed grafts provide only for reunion of stumps after destruction and replacement by host tissues, and are therefore unlikely to provide for a successful recovery in man.

### Islet Changes Produced by Insulin.

J. S. LATTA AND H. T. HARVEY (*Anatomical Record*, March, 1942) state that when albino rats are subjected to repeated injections of large or increasing doses of insulin a selective reaction is observed in the $\beta$ cells of the islets of Langerhans. The first changes noted consisted of vascular congestion in the islet associated with swelling of the cytoplasm of $\beta$ cells. Following this there was a shrinkage in cell volume, and apparent increase in the number of specific granules and disappearance of the canalicular apparatus, all suggestive of a suppression of secretory activity. Further changes encountered when treatment was continued consisted in further shrinkage of cell volume, the practically complete disappearance of specific granules coupled with decrease in size of the nuclei and condensation of chromatin. Eventually in many $\beta$ cells the nuclei became pycnotic and the cytoplasmic outlines quite ragged. The changes indicate the almost complete suppression of metabolic activity in these cells. After stopping the administration of insulin, $\beta$ cells so affected were able to regain their normal secretory ability as indicated by the presence of large vesicular nuclei, abundant specific cytoplasmic granules and the reappearance of an extensive canalicular apparatus. Alpha cells were readily identified in all material and remained unchanged through the course of experiments.

### Abnormal Pulmonary Veins.

L. C. CONN *et alii* (*Anatomical Record*, July, 1942) describe a rare case of anomalous pulmonary veins in which the four pulmonary veins drain by a single trunk dorsal to the right bronchus into the superior *vena cava*. The trunk is probably an hypertrophied right bronchial vein. Such abnormal bronchial veins are more significant than generally supposed.

### Blood Supply of Nerves.

W. E. ADAMS (*The Journal of Anatomy*, July, 1942) states that considerable anatomical evidence shows beyond doubt that all nerves receive a blood supply, and that it is derived from regional vessels which contribute to the formation of a longitudinal vascular pathway along the nerve. The various ganglia associated with peripheral nerves receive a much richer blood supply than that of the nerves themselves, although it is derived similarly from vessels in their vicinity. Such experimental evidence as is available indicates that its vascularity is of importance to a nerve, and that cessation of the blood supply to any part of a nerve affects the passage of the nerve impulse and will ultimately induce a complete nerve block. The larger, rapidly conducting fibres appear to be the first affected, and the ischæmic paralysis is completed by the involvement of the slow-conducting fibres. These changes are reversible, and restoration of the circulation through the nerve not only restores its capacity to conduct, but initiates exaggerated responses, which may be interpreted as the subjective phenomenon of tingling. There is as yet, however, no sound evidence that other subjective symptoms, such as pain and vertigo, may also result from ischæmia of nerve. The view that ischæmia *per se* may induce changes at the site of its occurrence which may be interpreted as pain has frequently been put forward. While such a view has never received much support, it is not impossible that the occurrence of pain may be correlated with the fact that ischæmia involves the rapidly conducting fibres first. According to the views of Pochin (1938) and Gasser, if the impulses travelling along the slowly conducting (C) fibres are released from the "damping" effect of those passing in the rapidly conducting fibres, pain of a severe type results. So that stimuli which would not normally result in pain may become effective when the propagation of the impulse along the rapidly conducting fibres is abolished by ischæmia.

### Posterior Pleuro-Pulmonary Margins.

E. LACHMAN (*Anatomical Record*, August, 1942) compares the results of radiographic investigations of posterior pleuro-pulmonary margins in the living with dissections of preserved cadavera. Since as a rule only the posterior mediastinal boundaries and the posterior inferior extent of lungs and pleura can be investigated on the X-ray films, the present paper is limited to a discussion of these boundaries. The author's results are not in complete agreement with conventional anatomical teaching. Skiagrams taken in the upright posture sometimes depict the presence of a prevertebral space which is occupied by lung and pleura. The posterior inferior pleural reflection is characterized radiographically by a line running horizontally or with medial ascent or upward concavity from the lateral thoracic wall toward the spinal column at any level from the twelfth thoracic to the second lumbar vertebra. This line corresponds to the posterior costo-diaphragmatic reflection of the pleura. A translucency craniad to it is due to inferior lung portions behind the diaphragmatic dome. Anatomical texts usually place the inferior pulmonary and pleural boundaries higher, and disregard the commonly found upward concavity. Reasons for the described discrepancies in the results of radiographic and anatomical approaches are given and the practical importance of the X-ray findings is pointed out.

### Sex Chromosomes in a Human Intersex.

A. E. SEVERINGHAUS (*American Journal of Anatomy*, January, 1942) gives the results of the study of the chromosomes of a human intersex, pseudohermaphrodite, male with testicles present, with a view to correlating possible structural irregularities in the chromosomes with the interruption of normal sexual development. The sex complex was composed of an X and a Y component, which segregate to opposite poles during the first maturation division. The chromosomes are therefore typically male in character, although the somatic characters of the individual are a combination of male and female. Observations confirm earlier claims that in man the male chromosome formula is 46 *plus* X and Y, the diploid number being, therefore, forty-eight chromosomes. A brief review of factors concerned with sex determination is given. In the case of the individual discussed in this report, it is not possible to say that the abnormal sex development was due to a primary disturbance of genic balance, although many cells with abnormal chromosomal balance were present. More probably these abnormal cells are themselves the result of an abnormal sex pattern for which secondary factors are responsible.

# Public Health.

## PARLIAMENTARY JOINT COMMITTEE ON SOCIAL SECURITY.

THE Parliamentary Joint Committee on Social Security was appointed "to inquire into and from time to time report upon ways and means of improving social and living conditions of the people of Australia and of rectifying anomalies in existing legislation". The personnel of the committee is as follows: Mr. H. C. Barnard (Chairman), Senator Cooper (Deputy Chairman), Senator Arnold, Mr. Maurice Blackburn, Colonel R. S. Ryan and the Honourable J. A. Perkins.

The evidence given before the committee in Melbourne has been summarized and published in previous issues. In the present issue we publish evidence given at Sydney by Dr. Robert Fergus Back and Dr. H. O. Lethbridge.

DR. ROBERT FERGUS BACK, being sworn, made the following statement:

I am first of all in agreement with the opinion expressed by the National Health and Medical Research Council, namely, that the present system of providing medical care to the public is capable of considerable improvement in some directions.

I propose in my evidence to point out some of the faults in our present system and suggest means whereby these may be eliminated.

Given the improvements suggested, I believe that a very efficient medical service will be available to the public—a service which might easily be worsened by an ill-conceived full-time service. However, should a full-time national health service be contemplated, with certain modifications which I propose to discuss, the one which I consider most suitable is a full-time salaried service on the lines laid down by the National Health and Medical Research Council.

The present faults include disadvantages to the patient and disadvantages to the doctor. There is also no opportunity for group practice.

*Disadvantages to the Patient.*—1. Under our present system the best service is available to the very rich or the people on relatively low incomes. The former are able to afford full private fees, specialist opinion and the aid of special investigations. To the latter is available some form of contract service, and failing that, or in addition to it, the services of public hospitals with their highly trained staff for consultative purposes and indoor treatment for major surgery or prolonged illnesses. I believe that by and large friendly society contract practice is fairly efficiently carried out, but it suffers from disadvantages inherent in any *per capita* system.

2. There are faults associated with outdoor treatment at public hospitals, probably the most outstanding of which are the following: (*a*) Many hours are wasted by the public waiting for attention. (*b*) It is a fact that whereas at the first attendance the patient is given a thorough and complete examination, any out-patient clinic quickly becomes so crowded with old patients that it is impossible to give any appreciable time to the reexamination of a patient who presents himself again at a clinic with fresh symptoms or aggravation of old symptoms. (*c*) A patient at a clinic tends to be a "case" rather than a sick person, and the confidence so often necessary for cure is difficult to obtain. (*d*) Continuity of treatment is not carried out as well as it might be, in so far as the patient may on any revisit be seen by either of two honoraries or even by a junior resident medical officer.

3. The difficulties of the complete radiological and pathological investigation of a patient of low income must be great when the medical man in attendance is not associated with a public hospital, as hospitals usually are unable to cope with work referred from outside doctors unless such patients are referred to the outdoor department, in which case I am afraid that not always are the results of the investigation communicated to the medical practitioner recommending the patient.

Finally, if it is assumed that a fairly good service is available to the rich and poor, there remains a large intermediate class who, despite the increasing provision of intermediate beds, are not catered for in the event of prolonged illness. With its consequent loss of earnings, a long illness to the man on, say, £500 a year, who is expected to pay private fees both medical and hospital, means financial loss out of all proportion to what it should be.

*Disadvantages to the Doctor.*—1. Under our present system no doctor can consistently fail to be available for a twenty-four hours' service and retain his practice. The advocates of a *per capita* system are fond of stating that such a system retains the merit of competition amongst medical men. What they imply is that the stimulus to good work is to make more money. One cannot deny that man is usually prepared to work harder to make more money, but "working harder" is not necessarily synonymous with "working better".

2. The money factor as between doctor and patient enters into our present system in ways which are undesirable. A patient with loss of earnings consequent on a prolonged illness not infrequently becomes disgruntled because he considers his doctor's fees excessive, when in effect such fees judged from the standard of time spent and skill entailed are eminently fair. This leads to unpleasantness, which tends to undermine the confidence and faith in the doctor and interferes with the doctor's ability to continue to minister efficiently to his patient, if indeed he is again given the opportunity. Again, one frequently sees a private patient with a malady which requires frequent visits, but because of the patient's inability to afford such visits one has to choose between neglecting the patient or seeing him frequently at moderately reduced fees. If the latter course is chosen, it is obviously unfair to the doctor, as he is not paid according to his deserts, and further, he creates a precedent which is difficult to overcome.

3. The honorary system. The statement is sometimes made that an appointment at a public hospital is worth £1,000 *per annum* to the holder. If reference is made to a senior consultant, I believe that this is an understatement. Without associations with a teaching hospital, a man cannot hope to build up a large consultative practice, nor as a general rule will he deserve to, because it is his long training as a junior specialist in the hospital that makes his work of that high standard which commands the respect of the students whom he teaches and who become his future supporters. The junior specialist in hospital, knowing that eventually he will reach the status of senior consultant with its assured rewards, is prepared to devote years to honorary hospital work, at the same time earning considerably less than a successful general practitioner of the same age. However, and this is not generally known, there has arisen a relatively large group of general practitioners serving mostly as clinical assistants, who devote hours of each week to honorary hospital work without hope of commensurate monetary reward. From choice and because of competition, because they have not been able to go overseas and acquire higher degrees, and because of the necessity of appointing the brilliant young graduate, few of these men can hope to obtain appointment to the full staff of a hospital, and so reach the stage of pure consultant with its higher monetary rewards.

May I cite one definite case. A man graduated in 1923 with honours at graduation, spent one year in hospital as a resident medical officer and then elected to go into general practice with a senior general practitioner, under whose guidance he continued to acquire further knowledge. For the last thirteen years he has been an honorary clinical assistant to out-patients at a teaching hospital. For the last five years he has been physician to out-patients at a suburban district hospital. At the present time he devotes four afternoons each week to public hospital work representing at least thirteen hours per week, and this is apart from occasional irregular visits. It is fair to assume that, given experience such as that, a general practitioner is no less efficient and in fact is extremely likely to be more competent than a man who has devoted himself exclusively to his general practice and has done no honorary work. Yet the very fact that the latter man is on call to his patients and is in a position to earn money for thirteen hours per week more than the former means that the "honorary" is at a tremendous disadvantage financially. Actually, most of those who make this sacrifice are prepared to do so, as they find tremendous interest and satisfaction in hospital work; but nevertheless there is so much outdoor work which is arduous and uninteresting that they feel that the position as stated is not equitable.

The above faults might be eliminated by the following measures.

1. Extension of contract practice to include intermediate patients. This would involve a greater capitation fee than now exists for ordinary friendly society practice.

2. Extension of the hospital contributory scheme by making membership compulsory to all, with a minimum benefit of £4 4s. per week.

3. The provision of suburban centres of radiology and pathology, where investigation could be carried out at a minimum cost to the patient.

4. The provision of a consultant service for domiciliary patients, on the lines now existing in New South Wales for obstetric cases.

5. Improvement in hospital practice by the following measures: (*a*) Provision of more "acute" beds in public hospitals for emergency cases, including beds in women's hospitals. (*b*) Provision of more intermediate beds. (*c*) Provision of appointments for patients attending outdoor departments. (*d*) Payment of honoraries. This is especially necessary for outdoor staffs, as these men are less able to afford the sacrifice of time without monetary reward. By the payment of honoraries punctuality of attendance could be insisted on. (*e*) By increasing the staff at outdoor departments. A clinic now staffed by two doctors, in addition to teaching students, now deals in the afternoon with an average of eight or nine new patients and anything between 20 and 35 old patients. At least three men should be working in a clinic of this size, one a senior, who would act in a consultative capacity in difficult cases, teach students on received cases and help his juniors with the routine work. (*f*) An insistence on the patient together with the results of investigation being returned to the general practitioner who referred him. (*g*) Provision of "subacute" and "chronic" hospitals. At the present time there is a crying need for accommodation for tuberculous patients under good conditions. Almost as urgent is the need for institutions for the care of patients with rheumatic heart disease.

Given these improvements, a very efficient service would be given to the public, and I would again insist that a national service short of the very best would fail to give to the public the efficient attention which they would get under an improved private system as outlined. I cannot emphasize the importance of this matter too greatly. However, even this system still has faults, in so far as it perpetuates the outstanding faults of any *per capita* system in which the hall-mark of success is the acquiring of more patients to neglect them. It makes no alteration in the twenty-four hour service which the practitioner is compelled to give to his patients; but above all it makes no provision for group practice and team work among general practitioners.

I feel that this question of group practice can bring in its wake such advantages to doctor and patient alike, that a national medical service which does not envisage it will result in retrogression from the present high standard.

It is for this reason mainly that I have arrived at the opinion that the scheme as laid down by the National Health and Medical Research Council is the one most worthy of consideration as a basis for discussion on the future of medicine within the Commonwealth. Emphasis must be laid on the statement of the National Health and Medical Research Council that "such discussion is essential for the correlation of differing but sincerely held points of view".

The willing cooperation of the profession is essential for the success of any scheme, and I am of the opinion that this is not likely to be forthcoming unless certain principles are admitted.

1. That the scheme is independent of political control. Rightly or wrongly the view is commonly held in the profession that in such a service as outlined appointment and promotion would be apt to go by favour rather than merit. It has been suggested that a separate commission similar to the Australian Broadcasting Commission be established. Personally I believe that the dangers of political interference have been over-emphasized and that the profession is not fully aware of conditions which operate within the public service. At the moment, however, the question of political control is a catch-cry with those who oppose a salaried form of service and is likely to influence the profession against the scheme, unless something is done to dispel the misapprehensions that exist about political control of the public service.

2. That as far as possible the administration of the scheme shall be in medical hands. Appointments and promotions should be dealt with by a purely medical board with power to obtain information and advice from local senior practitioners. Purely medical matters shall rest exclusively in medical hands, and above all there shall be no lay interference as between doctor and patient. Differences between doctor and patients must be settled by medical men, and on the whole medical men will not be found incapable of disciplining the profession, should such disciplining be necessary.

3. The principle of free choice of doctor should be preserved as far as possible. I believe that this is possible to an extent equal to that existing today in private practice.

4. There shall be reasonable compensation for loss of goodwill. The value of a practice is recognized as a tangible saleable asset. It represents a considerable part of a doctor's savings, and it cannot be expected that men will relinquish the large sums which they have spent to acquire a practice. In many cases such practices have not been paid off, and if compensation is not admitted these men would be left with debts owing on a practice which has through no fault of their own ceased to exist.

5. There is a definite statement of hours and terms of service. The vague statement about night duty being by roster and each actual night on duty being compensated by an afternoon off is not enough. Men must be told how many hours per week they will be on duty.

My personal opinion, and I stress that it is my view alone and is to be taken purely as such, is that while there will be a great deal of opposition by the profession to a salaried service, if the above principles are admitted there would be a considerable number of the best medical men who would be prepared to cooperate in such a scheme, and without the willing cooperation of these men the scheme must be doomed to mediocrity.

May I now offer some comments on the scheme as actually outlined by the National Health and Medical Research Council.

*Method of Payment and Financing Scheme.*—I think that it is desirable that the patient shall directly contribute some fee, which may be only nominal, on each attendance. If he does: (*a*) He will value the service more highly than if it is given without fee. (*b*) And further, I think it will hasten his recovery. In this regard I believe that in any full-scale national health service there must be a tendency to make the public more health conscious than is good for them and their peace of mind. My experience at out-patient departments has convinced me that this does happen, and it is often with the greatest difficulty that one can persuade a patient that it is no longer necessary for him to have his bottle of medicine. (*c*) It will promote greater efficiency by lessening needless calls on the service. At present a great number of people go to the local pharmacist for the treatment of minor ailments. Under a complete medical service the greater proportion of these will come to the doctor, and this will mean much more than the mere writing of a prescription, because in most cases a doctor cannot afford not to examine a patient.

*Teaching of Students.*—I can see difficulties in the way of collecting suitable patients for teaching purposes, in so far as the out-patient departments will tend to be depleted, and in any case patients, both indoor and outdoor, might reasonably object to being examined by students. Under present conditions most patients in public hospitals are prepared to allow students to examine them in return for the service they have received without medical fee and at very small hospital fees. These conditions will not apply under the National Health and Medical Research Council scheme.

*Domiciliary Visiting.*—Domiciliary visiting in practice will amount to considerably more than is apparently foreseen in the scheme. Whatever the provision for hospitalization of patients, there must remain a large number of patients to be treated in their homes, either because their illness does not warrant hospital treatment, or because they refuse to go to hospital.

*The Medical Practitioner.*—"He should soon qualify to the grade of Senior General Practitioner when a vacancy occurs." When one considers that the proposed proportion of senior general practitioners to junior general practitioners is considerably less than 1:3, it must be realized that this statement is grossly inaccurate, either from oversight or alternatively by design, and is used to bolster up the scheme to make it appear more attractive to the profession. This statement mars what is otherwise an honest and fair attempt on the part of the National Health and Medical Research Council to present a salaried service. The number of senior general practitioners allowed for must be considerably less than now exists in private practice. Take, for example, my own municipality of Petersham, with a population approximately equal to a "D" class centre. There are normally practising within or adjacent to its boundaries fourteen doctors. Of these only two are graduates of less than seventeen years' standing (one of four years' standing and one of eight years). Of the remainder, five have been in practice over thirty years. Of the full total, one is a graduate of four years' standing, one of eight years'

standing and one of seventeen years' standing; two are of nineteen years' standing, one is of twenty years' standing and one is of twenty-one years' standing; two are of twenty-eight years' standing, and there are one each of thirty-one, thirty-three, thirty-six, forty-one and forty-two years' standing. Probably all of these are under sixty-five years of age. Twelve out of the fourteen could reasonably expect to be senior general practitioners; yet the scheme provides for only four seniors and twelve juniors for an area the size of the Petersham municipalities. Another great difficulty is that by and large a doctor does his best work from fifteen to thirty years after graduation, in between the ages of approximately forty and fifty-five years. Incidentally, these are the years when his financial responsibilities with a family growing up are the greatest. Under the scheme it is difficult to see how his best working years can be adequately rewarded, as senior posts must be largely filled by older men—men who in the main are in medicine, because of its rapid advancement, past their prime.

I believe that the number of senior general practitioners must be considerably increased; and for the efficiency of the service and out of fairness to the young men, that at the age of sixty a practitioner shall be forced to retire, or alternatively to revert to a relatively junior rank.

*Remuneration.*—While I believe that men of fifteen or more years' experience will under the scheme have a less income than at present, provided the number of senior general practitioners is increased very considerably, the extra facilities of limited working hours, leave and superannuation will go a long way to compensating for loss of income.

No one can estimate the value of money after the war, so it may be necessary to make provision for fluctuation of salaries according to the purchasing power of money.

I agree that there should not be a great discrepancy between specialist and general practitioner salaries, for the following reasons: (*a*) Under the scheme the specialist in training and the junior specialist will not have the lean years which they are under present conditions forced to go through. (*b*) Specialism is so often a matter of opportunity rather than increased ability.

*Accommodation.*—The accommodation suggested for a "D" class clinic appears to be totally inadequate for a staff of sixteen general practitioners and specialists. It should provide for (i) at least eight consulting rooms with two examination rooms to each consulting room; (ii) some type of common room for practitioners. This could house a library and would be a place where helpful and valuable discussions could take place.

Finally, this scheme with the modifications suggested could be made into a service which would be a credit to the nation. It could provide a most up-to-date and efficient service to the public, and I believe that the idea of group practice and team work is pregnant with such tremendous possibilities, affording as it does opportunities for general practitioners to extend their knowledge and interest in special branches of medicine, thus providing a tremendous stimulus to better work, while at the same time they retain that wide outlook on the whole field of medicine which is so essential.

*Introduction during the War.*—I do not consider it advisable or practicable to introduce the scheme during the war for the following reasons.

1. At present there are not enough medical men left in practice to adequately staff it, and the scheme would tend to fall into disrepute because of the inevitable rush examination of patients.

2. Habits of rapid and inefficient work would creep into the scheme, habits which would become the accepted standards of the scheme, and which would be difficult to eradicate even when adequate staffs were available.

3. The construction and equipment of the necessary buildings seem quite impracticable at this juncture.

4. The profession will not be in a position to give a representative opinion on any scheme for at least twelve months, and further, with so many men away in the Services a representative opinion could not in any case be obtained until after the war.

The medical profession cannot be expected to give a final opinion on its willingness to cooperate in any scheme until such time as the full details are available. We are all individualists at heart, and each man really wants to know how he himself will be placed under any particular scheme before he is prepared to commit himself to joining it.

While I personally at present prefer a salaried scheme, the majority of men seem to be opposed to it. It will therefore be necessary to work out in detail three schemes: (i) a salaried scheme, (ii) a *per capita* scheme, (iii) a payment per service scheme. Such details must include the full conditions of service and remuneration.

I believe that until then no man can finally decide which scheme is the best. A body competent to decide these details should consist of representatives of the medical profession (public health, hospital, specialist and especially general practitioner), representatives of the Government, who would be informed of the Government's point of view and how much it is proposed to spend on a scheme, and finally building, medical equipment and financial experts.

The body must be small enough to be able to thrash out problems together, and it would appear necessary that it sits full time until the schemes are worked out. A purely medical body is not competent to work out details, especially financial and building details.

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Senator Arnold said that one of the chief disadvantages of hospital out-patient departments was the amount of waiting that was necessary for patients, and he asked whether the same applied to general practice. Dr. Back replied that it did, but more so since the outbreak of war. In hospital out-patient departments some patients had to wait all day. That state of affairs could be obviated in a salaried scheme by the use of an appointment system, although in urgent cases patients would have to be examined at once. But the out-patient departments already dealt with tremendous numbers of people, and the numbers would not increase under a salaried scheme. The saving in time effected by "zoning" would give doctors an opportunity to deal with the question. A clinic in a "D" class centre could go on all day instead of for a few hours only, as at present. But it would have to be made quite clear that only patients who simply could not attend during the day could be attended to at night. Dr. Back was certain that the length of time now spent in waiting could under a salaried scheme be reduced, if not avoided altogether.

Senator Arnold then asked Dr. Back whether it was his opinion that if a salaried service was introduced compensation should be paid for practices taken over, or whether superannuation should make that provision. Dr. Back replied that some compensation should be paid. If a practice taken over belonged to a man aged fifty-five years, and if he had bought the practice at the age of thirty, it could be argued that he had got full value out of it; but if the practice belonged to a man aged thirty years, who at the age of twenty-five had spent approximately £3,000 on purchasing it, to take it over without giving him compensation would not be fair, because almost certainly he would not have freed himself from debt on it. Dr. Back was certain that provision for the payment of compensation would remove the hostility to the introduction of a salaried service; he considered that the absence of such a provision was a justifiable objection. Asked by Senator Arnold whether he placed great significance on the free choice of a doctor, Dr. Back said that he himself did not. He thought that a large number of people chose a doctor quite by chance. He thought it desirable that free choice of doctor should be maintained, and saw no reason why it could not be maintained. In England only 10% of people failed to transfer to the new doctor. Another difficulty in the question of free choice of doctor was that the patient was not always in the best position to exercise free choice; a patient with a surgical condition might wish it to be dealt with by a physician or a general practitioner. In reply to a further question by Senator Arnold, Dr. Back said that although a patient was transferred back and forth in the buying and selling of a practice, he thought that that was not so important to his cure as continuity of treatment. Dr. Back deprecated the frequent moving about of doctors; stability was necessary.

Dr. Back held that any salaried medical service should be independent of political and departmental control. Senator Arnold said that it had been suggested that some body such as the Council for Scientific and Industrial Research might be preferable, and Dr. Back considered that it would meet with more approval than departmental control. He thought, however, that there was a considerable amount of misunderstanding on the question of departmental control; contrary to the accepted belief, he understood that men were employed or dismissed, not by the Minister, but by the Public Service Board, which was independent of party. Dr. Back thought that a statement of the facts concerning the public service should be made.

Senator Arnold referred again to the National Health and Medical Research Council scheme. He said that under

that scheme country districts would always have a junior practitioner, and he asked whether Dr. Back thought it would be possible to get over that difficulty. Dr. Back said that that was very much what obtained at present. He considered that when a man had spent twelve months as a resident medical officer in a hospital and another in a clinic or hospital, he was pretty capable. Dr. Back saw no great disadvantage in the arrangement. He thought that the better men tended to gravitate towards the centres of population—not necessarily the older or younger men. Country practitioners were exceedingly competent.

Replying to Senator Arnold, who asked whether there would be a lack of incentive in a salaried service, Dr. Back said that he felt very strongly on the question of the value of group practice. Men were interested in one branch or another of medical practice, and thus their work was better in that branch. Dr. Back imagined that under the scheme men would still retain their interest in general practice, but would have greater opportunities for special work; that would mean an exchange of interesting work, which would provide a greater stimulus than anything else. Dr. Back went on to say that medical men did not work in public hospitals only from interest in the community; nor did they do so for monetary reward, because they did not get it; they went to the hospitals because of the stimulus of interesting work, and monetary reward did not enter into it. Under a salaried scheme that was properly organized, things would be much better. Much would depend on the key man, who would need to be keen.

In reply to a further question by Senator Arnold, Dr. Back said that it was difficult to arrange for post-graduate study in general practice, because time was so limited. Much time was spent in public hospitals, and the doctor suffered from the necessity to earn his living. Dr. Back said that he saw interesting things in the public hospitals, but he had no time to read; he would be glad to have that. Three months' leave every five years would be adequate for a concentrated course of post-graduate study, for a long spell; but in the country wherever possible one week a year should be arranged. In the city it would be possible for time off to be arranged, so that people could do post-graduate work from day to day.

In answer to a question by Colonel Ryan, Dr. Back said that he did not know what proportion of medical men bought practices and what proportion "squatted"; but the man who "squatted" had to face many lean years, just like the one who bought a practice. Dr. Back had not noticed in his work that the man who "squatted" was unpopular among his colleagues, though he thought such might be the case in isolated country areas. Under normal conditions there was no antagonism to men who "squatted"; but men doing it now were unpopular, on account of the absence of a large number of men on active service overseas. Every man whose practice was taken over under a national scheme would be entitled to compensation, whether he had "squatted" or bought a practice. Colonel Ryan asked how long it took with ordinary work under present conditions for a man to become a senior general practitioner. Dr. Back replied that if the man bought a practice, he might not have many lean years at all. He might have up to four years in hospital, and then if he bought a practice he might start as a senior general practitioner. Dr. Back thought that when a man had been in practice for fifteen years and had reached the age of forty years, he was probably as capable as he would ever be, and was doing his best work; that was the man who should be given the status of senior general practitioner. But he should not be promoted just because he had been in general practice for fifteen years. Referring to the National Health and Medical Research Council scheme, Dr. Back said that a man was doing his maximum work between the ages of forty and fifty-five years, and the salary suggested for a man aged forty years ranged from £1,200 to £1,600 *per annum*; he agreed with Colonel Ryan's suggestion that a system of yearly increments would be fairer.

Colonel Ryan then referred to the question of free choice of doctor. He asked whether, in a large centre where a patient had the right to choose his doctor, any limit would be set to the number of patients any doctor could have. Dr. Back thought such a limit necessary. Referring to the organization of small country centres, Dr. Back said that he thought one general practitioner consultant would be enough; patients in need of more specialized care would be sent to the city. He thought that the general practitioner should be given the opportunity to specialize a little, and that the "D" class centres as laid down in the National Health and Medical Research Council scheme were reasonable. They would be somewhat too large for his own area, but fair for country centres. In centres such as Armidale there should be one senior and one junior physician, to save sending patients to Sydney.

In reply to a question by Colonel Ryan on the subject of the relationship between the family doctor and the family, Dr. Back said that every doctor treated families who had the greatest confidence in him and who went to him for advice on matters not connected with medical practice.

Mr. Perkins asked whether Dr. Back had talked over the question of a national medical service with any of his colleagues. Dr. Back said that he had done so very widely, but that the views he had expressed were his own entirely, although he thought that they were shared by many of his colleagues. His impression was that there was likely to be a great deal of opposition to the introduction of a national salaried medical service.

In answer to a further question by Mr. Perkins, Dr. Back said that it was often difficult to obtain beds in hospital for acutely ill patients. Patients were going to hospital more than they used to; it was largely a question of education of the patient, and moreover, the doctor was now not content to treat a patient "on the blind"—he wanted full investigation. Doctors were sending more patients to hospital, and that fact had created a demand in the public mind. Asked what should be done, Dr. Back said that he was not in favour of increasing the size of the present hospitals; he did not like hospitals to be too big. While large hospitals were necessary for difficult and complicated cases, there was no reason why most labours, for example, should not be conducted in smaller places.

Asked by Mr. Perkins to give his opinion of a medical service run on a *per capita* basis, Dr. Back said that he did not like such a system at all. It was in operation in Great Britain, and while the standard of specialism was possibly higher in Great Britain than in Australia, general practice there was probably at a much lower standard. Dr. Back thought that if the improvements he had suggested were put into operation, the health of the nation would be as good as it could possibly be made; but he feared that under any nationalized scheme that was not of the very highest order, the health of the nation might suffer. Dr. Back thought that an alteration in the present system would be accepted by medical men.

Senator Cooper asked Dr. Back whether he thought that a good salaried medical service and private practice could conveniently run together. Dr. Back replied that there was one great difficulty. A salaried service of the type suggested by the National Health and Medical Research Council made provision for the employment of over 4,000 doctors; there were only 4,000 practising doctors in Australia. But there should be provision for men to stay in private practice if they so desired; patients should be able to go to private practitioners if they wanted to do so. Dr. Back thought it impossible to compel a man to join a scheme, and there would undoubtedly be a certain percentage of the population who would prefer private doctors; but that would depend to a large extent on the efficiency of a national medical service and how it was regarded by the people. Dr. Back agreed that the willing cooperation of the medical profession was essential to the success of any scheme, and he reiterated his suggestion that an independent body should be set up, consisting of medical practitioners, to investigate the question. There should be representatives of the medical profession in general, public health officers, hospitals, specialists and general practitioners. The body should for the present be divorced entirely from any other body. There should also be a representative of the Government to tell them what the Government was prepared to do and what it was prepared to spend, a financial expert, a building expert and a medical equipment expert. The body should be constituted and should draw up full details of each of the schemes and submit them to the medical profession as a whole. Until such time as full details were worked out, Dr. Back thought that no one was in a position to give an opinion on what he was prepared to do. Asked by Senator Cooper whether he would not have on the body he had suggested some representative of the general public—a member of a trades union, of the Returned Sailors and Soldiers' Imperial League or of a friendly society—Dr. Back said that the suggestion was a good one; but the preliminary working out of a scheme required a smaller body. He thought the schemes should be formulated, and submitted to such representatives afterwards. The body should consult with all the other bodies that had been mentioned, but should be kept as small as was compatible with the gathering of information. Asked by Senator Cooper whether it would be advisable to go on with the setting up of the framework of whatever scheme was chosen at once, instead of waiting until after the war when it was doubtful

what the position would be, Dr. Back said that it would be impossible to run a full scheme while so many men were away, but a start could certainly be made with the preparation of the scheme and the placing of it before the medical profession. There was everything to be gained by such a course of action, because in the event of its being possible to establish a scheme it could then be established at the earliest possible moment. Men returning from the war could then fit into any scheme formulated; but Dr. Back emphasized the necessity of obtaining the opinion of men on active service as well as of doctors still carrying on in Australia.

The Chairman asked Dr. Back what he had meant in his reference to the payment of honorary medical officers at public hospitals. Dr. Back replied that the present system of having part-time men was infinitely preferable to full-time employment, because the experience gained in outside practice was very valuable. It was a grave mistake to establish the principle of full-time paid teachers in hospitals. Dr. Back suggested the continuance of the present system, under which honorary medical officers gave a certain number of afternoons per week, the officers to be paid so much per session.

Asked by the Chairman what type of control body he favoured for a national medical service to cover the whole of the people, Dr. Back said that he could give no definite opinion; he would like to know more about the constitution of the Council for Scientific and Industrial Research. The question of political control was a bogy that had been so often repeated that he thought perhaps too much had been made of it. The principle to be established was that there should be no pulling of strings. Dr. Back agreed with the Chairman's suggestion that some body should be established to control the scheme that would create public confidence, that was not bureaucratic, that was free from political control, and that would give even-handed justice to those bound to work under that control. Dr. Back also agreed that for appointments and promotions the examiners should be medical men, who in his opinion were shrewd judges of the ability of their *confrères*. Dr. Back agreed that some body run on lines such as those of the Australian Broadcasting Commission would be suitable.

DR. H. O. LETHBRIDGE, having been sworn, said that he had read the schemes submitted, and that he spoke for the country, where conditions were different from those in the city. On the whole, the public was well catered for in all country districts, and in his experience the standard of medical practice had improved very much. At the present time there was no isolation, transport was much easier, and no one was very far away from a doctor. Dr. Lethbridge did not like the idea of bringing in a salaried scheme at once; he thought it would mean the disruption of a machine that on the whole was running well. But he thought that many improvements could be made, and he preferred that they should be made as suggested by the British Medical Association rather than by the introduction of a total salaried scheme, although he did not wish to speak dogmatically. Dr. Lethbridge was certain that the British Medical Association would always help to the utmost in furthering the health of the community. In the country there were men who were the general practitioners and the hospital honoraries to the same patient, and there were, too, certain general practitioners who had fitted themselves by study *et cetera* to be in some degree consultants. Such men were those who had done X-ray work and pathological work in their private practices and had kept abreast as far as possible of all advances in those branches of medical practice. At the present time there existed the friendly societies, contribution schemes and a social service for the unemployed; but a section of the people were still not in any scheme. Dr. Lethbridge thought that for any scheme to be satisfactory it had to be compulsory, because there would always be a certain section of the community that would stay out of it. With regard to hospital contribution schemes, Dr. Lethbridge said that there should be a universal method of administering them. Above all, it had to be realized that the basis of all medical service was the individual cooperation between patient and doctor; there was a percentage of mind treatment and a percentage of body treatment, and sometimes the mind treatment required 100%. For that reason Dr. Lethbridge did not like patients to go directly to a consultant; the consultant did not know the patient. Broadly speaking, Dr. Lethbridge thought that more improvement would be achieved by righting the wrongs of the present state of affairs than by completely altering it. With regard to "A" class towns, Dr. Lethbridge said that they all had their doctors in practice, and he asked what was to become of them if a salaried service was instituted. Dr. Lethbridge disapproved of the proposal to put young men in "A" class stations that were rather isolated; he held that that was where experienced men were needed, because doctors practising in such places were faced with difficult problems. If young men were to be sent to "A" class stations, it would be essential to arrange some method of easy consultation. Speaking of child welfare, Dr. Lethbridge said that a tremendous amount had been accomplished; lectures on diet were given to parents and citizens, school children were examined medically, and the results of diphtheria immunization had been magnificent. With regard to maternal welfare, Dr. Lethbridge said that in the country difficulty arose in cases in which pregnant women had to leave their homes and await confinement in town near a hospital. Usually such women could not afford to stay at an hotel, and it was wrong for them to wait in hospital. Hostels for the purpose were necessary. At Narrandera the Country Women's Association had women who went out to the homes of such women and did their housework while they were having their babies. On the question of tuberculosis, Dr. Lethbridge thought that the universal radiological examination of children was too unreliable to be of any practical value. The practice of examining radiologically the chests of youths and adults had many advantages. In reply to questions on the subject, Dr. Lethbridge said that the skiagrams of children's lungs had so many shadows that it was difficult to give a definite report on them. Radiology was only one aid to diagnosis and not a very reliable one, even in adults. A skin test was helpful, but its results were not 100% accurate. But with regard to tuberculosis the mistake had been that too much importance had been placed on the fact that tuberculosis might be caught from milk or in some way in childhood. Dr. Lethbridge's experience had been that tuberculous patients caught the disease from somebody else; it was an infectious disease. Dr. Lethbridge instanced the hypothetical case of the young married man with two children who was found to be tuberculous; he was told that he must not come in contact with the children, but it was difficult to see what he could do. Such problems were worrying. In X-ray plants there had grown up a tendency to think that technicians could interpret the appearances on films; such an idea was wrong. X-ray plants had been installed in some country hospitals where the doctors were not keen, and the matron had done the X-ray work. With regard to the ownership of X-ray films, Dr. Lethbridge said that the films should be the property of the hospital or the radiologist, and the patient might be given the report.

In reply to questions by Mr. Perkins, Dr. Lethbridge said that in the country everyone could obtain medical aid. The poor did not suffer from lack of attention, because out-patient departments were open at the hospitals every day; poor people went to the doctor's surgery, and he sent them on to the hospitals. Dr. Lethbridge thought that there was room for improvement in medical service in the country without the introduction of any system of nationalization. All people should have some sort of insurance for health. There were various schemes and organizations, but there were many people outside the schemes who in illness were unable to pay the doctor or the hospital. Those were the people who would worry him. Dr. Lethbridge went on to say that the hospital at Narrandera was representative of an ordinary country town hospital. It had 100 beds, a good X-ray plant and a well-equipped pathological laboratory. Dr. Lethbridge held the view that hospitals had been far too elaborate and unnecessarily costly. A patient was not made better by an elaborate building; his welfare depended on his doctor and nurses. In hospital construction as seen in the country, the idea had developed of having the operating theatres and the sterilizing room next to each other; it was a very bad idea, because in summer the operating theatres were unbearably hot. At Narrandera it had been necessary to instal an air-conditioning plant in the operating theatre. Dr. Lethbridge was of the opinion that country hospitals were economically run. They were not the same as teaching hospitals, since they existed only for the healing of the sick, and the doctor who attended the patient outside also attended him in hospital. Dr. Lethbridge said that an attempt had been made to introduce specialism into the larger centres; but so far no specialists had gone to any of the medium-sized centres. That was the difficulty in the country; but if the general practitioners were of the type who kept abreast of the times and had a conscience, they could do much good.

Mr. Perkins asked Dr. Lethbridge whether he was acquainted with the Far West Scheme, and how it was that

children who were brought to the city under the scheme seemed to have a number of conditions that required medical treatment. Dr. Lethbridge replied that it was possible that there were some towns where doctors had missed certain cases; but his experience was that the patients had been seen by their doctors and sent to the city for treatment. The Far West Scheme was bound up with the idea of children's health. But country doctors were quite capable of attending to the children, and if the patients needed specialist treatment and the doctors were unable to give it, they sent them to the city. In some cases inability to have medical attention was not the point; the fact was that the parents had been careless about their children and had not taken the advice of their doctors. Asked by Mr. Perkins whether some system of compulsion to make parents have their children attended to would be beneficial to the health of the nation, Dr. Lethbridge said that he did not know whether such a course of action would be justified.

In reply to questions by Senator Cooper, Dr. Lethbridge said that three improvements that he could suggest were in transport, in measures to protect the welfare of mothers, and in the enlargement of the hospital contribution schemes. Dr. Lethbridge thought that "A" class towns at the present time had first-class doctors, and that the standard of medical practice in the country was high. The men in such towns were mostly men of experience, and the people were receiving better service at the present time than they would get from doctors going there direct from hospital. Asked by Senator Cooper whether there were not quite a number of very young doctors or of doctors who had just drifted there in the outback, Dr. Lethbridge said that that used to be the case in the Riverina district of New South Wales; he could not say whether it was still so in other districts, but that state of affairs no longer existed in the Riverina. In places where no doctor was established a salaried service would be a good idea; subsidized practices existed in the country, and they worked very well. But it had to be realized that remuneration alone would not take good men to such places; such men were isolated, and if they did not like the country they would not go there. The population of Narrandera was about 5,000, but the hospital served a large area. Senator Cooper pointed out that according to the National Health and Medical Research Council scheme Narrandera would be a "B" class centre and would have a specialist service as well as a general practitioner service; he asked whether Dr. Lethbridge thought that would be enough. Dr. Lethbridge replied that he thought the suggested service for Narrandera and the district it served rather unnecessarily elaborate. Dr. Lethbridge admitted that no specialist service was available at Narrandera, though such services were established at Wagga and Orange, and that patents requiring specialist attention had to go to Sydney. Dr. Lethbridge thought the idea of decentralization of specialists excellent, but the proposals for Narrandera provided for too large a number. However, the scheme was good, and would develop some day; the position was righting itself to a certain extent, because specialists were going to the country at the present time. Dr. Lethbridge agreed that the only thing that would draw them to the country was the possibility of making a reasonable living. Senator Cooper said that the idea in mind was to provide for the country the same service as for the city, and he asked Dr. Lethbridge whether the ensuring of a reasonable living would be sufficient inducement. Dr. Lethbridge thought that that was the only way to achieve the object in view and induce men to specialize in small places. As he had said before, many men had become consultants in the country from ability, and their opinion was valuable. Dr. Lethbridge agreed that the ideal would be to have specialists in the country doing only their special work, but he did not know how the ideal could be achieved, except by the introduction of a salaried medical service. He thought that it would be possible to run a salaried service and allow private practice to remain as well; many people would prefer to retain their own doctor. Dr. Lethbridge thought it would be possible to have doctors in a salaried service and give them the right of private practice as well, because enlargement of the services that were paid for at the present time would mean almost a salaried service; he was referring to such organizations as the friendly societies—the work of some doctors was already as much as 50% "salaried". Enlargement instead of disruption of the present services was in his opinion the best course of action. Senator Cooper asked whether Dr. Lethbridge considered that any scheme brought in should be compulsory and universal. Dr. Lethbridge replied that not the scheme, but the contribution, should be compulsory and universal; it was necessary to make people insure themselves. In that way doctors would be allowed some private practice, and patients would have freedom of choice of doctor. Dr. Lethbridge did not agree that the same state of affairs would apply under a salaried scheme, because the question of numbers had not been considered. Doctors at present were very busy and their numbers were reduced. He thought it would be impossible to implement such a scheme during the war; men who were away on active service should be given an opportunity to voice their views.

In answer to questions by Senator Arnold, Dr. Lethbridge said that for people living 15 to 20 miles out conditions had changed, and patients usually went in to the doctor; visits to patients had become exceedingly rare. The patient went in to the town in a car (he obtained petrol from the police), or else the ambulance was sent out. If a doctor went out to the patient, the mileage fee used to be 10s. 6d; but Dr. Lethbridge had never charged it. If, for example, the patient had influenza and did not require admission to hospital, but did require medical attention, he usually went in to the doctor by ambulance. The ambulance was a great help, and distance was no longer a great handicap. Moreover, nearly everybody had a telephone, or there was one nearby. There was very little visiting, and the reason was better transport. The contact between doctor and patient had not disappeared with the reduction in the amount of visiting; the patient still had the doctor whom he trusted, and the only difference was that the contact was not made at the patient's home. Dr. Lethbridge emphasized that tremendous personal contact was still present. With regard to his opportunities for post-graduate study, Dr. Lethbridge said that he used to be a member of the New South Wales Post-Graduate Committee in Medicine, and that he had always attended the Australasian Medical Congress (British Medical Association). He had been able to arrange for *locum tenentes* to do his work during his absence; but he was sure that it must be difficult for some men, not so fortunate as himself, to get away. However, Dr. Lethbridge believed that if a man wanted to, he could go on being a student all his life, and that if he wanted post-graduate study he would get it, even in country towns. Referring to the growth of group practice, Dr. Lethbridge said that in theory it was a very good thing; but in practice the individual medical attendant lost contact with his patient. Dr. Lethbridge thought it would be better if members of the group acted as consultants and let the doctor who knew the patient still attend him. At the hospital at Narrandera patients did not have to have a doctor allotted to them; the doctor who sent the patient to hospital attended him during his stay there. Moreover, when a patient went to the hospital without having first consulted a doctor, he could choose his own. Asked by Senator Arnold whether he thought that patients had much ability to choose which would be the best doctor, Dr. Lethbridge replied that he did not; the answer to that question was provided by the number of people who went to quacks. However, free choice of doctor was bound up with the all-important factor of the patient's confidence in his medical attendant. On the whole, the doctor chosen would be a decent man, and if anything in the patient's condition worried him he would take another opinion. Medical men were mostly very human and anxious to get their patients better. In reply to a question by Senator Arnold concerning 35-millimetre X-ray films, Dr. Lethbridge said that they were a valuable aid to diagnosis in youths and adults; but he preferred not to comment further, because he had not used them. Dr. Lethbridge agreed that it would be a good idea to induce people to be radiologically examined every five years between the ages of fifteen and thirty years, but he doubted whether it would not be unnecessarily expensive to examine all such people. However, such examination of people who had had contact with tuberculosis was essential; it was carried out in Narrandera, and the people responded very well.

In reply to questions by Colonel Ryan, Dr. Lethbridge said that there were at present in Narrandera three general practitioners, including himself, and he was trying to give up general practice. The population at the present time was about 12,000. Dr. Lethbridge added that the figure he had given was not quite fair, because he was doing all the pathological and radiological work, and was really doing no general practice. Referring to the middle class of patients, those who were neither very rich nor very poor, but received about the basic wage, Dr. Lethbridge said that in case of long illness which was a great financial strain on such patients the doctors in Narrandera reduced their fees; moreover, such patients had probably joined a contribution scheme, which meant that their hospital fees were either reduced or did not exist. Such schemes were a tremendous safeguard for people of that type. If the patients had not

joined such a scheme, they entered a public ward in the hospital, and if they had a long illness perhaps they could not pay either the hospital or the doctor. Dr. Lethbridge pointed out that it would be much better for themselves, for the hospital and for the doctor, if such patients were insured; that would be a salaried scheme, but not quite the same as the scheme suggested. Dr. Lethbridge did not agree that a doctor's anxiety to increase his number of friendly society lodge patients caused the patients to suffer or to be given a less thorough examination; he thought that the bulk of medical men had fairly high ideals. As far as some contribution scheme was concerned, he would like to see everyone insured. Dr. Lethbridge did not think that in general the introduction of a salaried service would take away the incentive to do good work; he thought that a man did his work according to what was in him, regardless of any salary. Asked how it would be possible to work a salaried service with doctors who retained the right of private practice, Dr. Lethbridge said that a patient might be on a certain doctor's list, and he would treat him for nothing; but the patient might prefer to see another doctor, and pay. Many lodge patients did that at the present time. Dr. Lethbridge thought that such a system could be made to work in a place like Narrandera. He considered that an increase of all the existing salaried parts of medical service would meet the case better than the wholesale introduction of a complete service. He thought that there might be a danger that the free service would push out the service that had to be paid for. The salaried service would depend on what the patients paid into the different schemes, and private practitioners would have a hard time. Colonel Ryan wondered what would happen if all the patients went to the private practitioners and left the salaried doctors. Dr. Lethbridge considered that the supposition cut no ice. He pointed out that thirty years ago doctors looked with alarm upon the school doctor's encroachment on private privilege; at the present time they realized what an inestimable advantage the school doctor was. The same thing would apply to a salaried service; if it was brought in in one blast, it would be looked upon as an encroachment; if it proved itself, doctors as a whole would be anxious to help. Dr. Lethbridge repeated his belief that any sweeping changes should be brought in gradually; the idea was to right a wrong where a wrong was known to exist, but not to upset a machine that was running smoothly.

# Medical Practice.

## THE STAINING OF THICK DROPS OF BLOOD FOR MALARIA PARASITES.

DR. F. S. HANSMAN, of Sydney, reports that the following simple technique has been tried in several laboratories in Sydney, and extensively at the 113th Australian General Hospital, and it is found to give satisfactory and consistent results:

1. Fix a thick drop of blood by drying in air and then passing the slide through the flame as for fixing bacteria. Heat the slide till it is just comfortable when placed flat against the thenar eminence.
2. Prepare a solution containing one part of Leishman's stain and fifteen parts of tap water or buffered distilled water. Considerable latitude in the degree of dilution is possible.
3. Pipette about one cubic centimetre of this solution onto the thick drop and agitate the solution, occasionally taking care to leave the drop covered. Continue till the whole of the hæmoglobin has left the drop, usually about 30 to 90 seconds, depending on the thickness and age of the drop.
4. Add to the diluted stain on the slide several drops of Leishman's stain and mix with a rod or pipette or by blowing, till the fluid covers the drop.
5. Leave for two minutes or longer.
6. Wash with tap water and air dry.

# Correspondence.

## THE WEANING OF INFANTS.

SIR: In a recent article in the *British Medical Journal* of September 5, 1942, Dr. Charles McNeil, of Edinburgh, has pointed out the dangers—medical and economic—of the tendency to unnecessary weaning of infants, all too commonly seen. It is with very great concern that many of us have noticed the same tendency in this country.

There are two essential objections to unnecessary weaning:

1. The danger to life and health of the child. It might be thought that this was sufficiently well known by this time, but the reckless disregard for it in certain quarters is surprising. It cannot be too strongly insisted that unnecessary weaning handicaps the baby and probably injures the mother, in most cases it is entirely unnecessary, and finally that it is very often done merely because it is easier to acquiesce than to go to the bother of encouraging and training mother and child.
2. But there is another and almost an equally important aspect of the question at the present day—the manpower question.

The nursing mother, to put it plainly, belongs to that very important class of animals who may be termed middlemen—who take in food that is not suitable for human consumption and turn it out as suitable food: the cow, the hen and the pig are common examples.

The nursing mother is able to take in food which the baby cannot use and turns out food that he can, and she does it at a very much lower cost in money and manpower.

Think of the number of men required to produce what is often the only satisfactory substitute for breast milk—dried milk; think of the tins—the machinery—the workers—or bottles—ice-carts—and zoning.

Also it is only fair to point out that these nursing mothers deserve greater consideration from the community and they are probably the greatest sufferers from the restrictions on delivery of meat and groceries, milk and vegetables at their homes.

But at least the medical profession can encourage them in well-doing and assure them that if they will only persevere they will gain in happiness with a healthy baby—financially with lowered costs for food—and withal with the feeling that in no small degree they are helping the war effort.

Yours, etc.,

S. F. McDONALD.

"Craigston",
217, Wickham Terrace,
Brisbane.
December 31, 1942.

## PROBLEMS OF INFANT FEEDING.

SIR: There appear to be very divergent ideas in regard to the right method of feeding babies when it is found necessary to adopt artificial feeding. To me it is somewhat confusing and I am writing this letter in the hope that the position will be clarified.

In New South Wales there are two rival systems, Karitane and Tresillian. Beyond the fact that Karitane slightly modifies the ordinary lactose and cod liver oil emulsion, terms the resultant products Karilac and Kariol respectively and makes a handsome profit from their sale, I can see no essential difference between the two systems. If Karitane and Tresillian are right, then it would appear that the rest of the world is in the wrong. This does not make sense to me; nor does the appearance of Karitane and Tresillian artificially fed infants give support to their claims of efficiency. Generally these children do not look as robust as one would expect.

The whole trouble in my mind is in regard to the protein content of cow's and human milk. Karitane and Tresillian appear afraid of protein.

Many years ago Truby King, the originator of Karitane, made the statement that "excess of protein overtaxes the digestive organs and the kidneys by imposing on them two to three times their proper daily work". This is just a statement and not backed by any pretence of scientific proof. Yet Karitane and Tresillian continue to accept it as gospel truth. For myself I prefer to accept the opinion of Sir Robert McCarrison: "Insufficient protein of the right kind tends to a degradation of vital processes, a degradation which manifests itself by stunting of growth, poor physical lack of energy, and lowered resistance to infection" (*vide British Medical Journal* June 15, 1940). Also Parsons and Barling in their text-book "Diseases of Infancy and Childhood" on page 766 state: "The infant's tolerance for cow's milk protein is extremely high."

As everyone knows, proteins are composed of amino acids, of which twenty-four are known. Some of these amino acids are more valuable than others. Now it happens that

the amino acids contained in human milk have a high value, those in cow's milk have a lower value. Therefore if cow's milk is substituted for human milk extra protein is required to make up for its lower biological value. Therefore the Karitane "humanized milk" and the Tresillian "modified milk", made to correspond with mother's milk in its constituent elements, both contain inadequate protein.

Both Karitane and Tresillian have one favourite argument they trot out to mothers, that "a baby is not a calf". Neither is a man an ox. An ox, although living on grass, is stronger than a man, but that is no argument that a grass or vegetarian diet would suit a man. The fact is that the ox is so constituted that it can grow and develop on a poor grade of protein, whereas a man cannot. For a baby to develop soundly on cow's milk the protein content must be greater than the proportion present in mother's milk.

There is plenty of practical evidence that excess protein does not harm a child. Karitane or Tresillian feeding a healthy four months old baby will give equal parts of milk *plus* emulsion and lactose.

Kate Campbell, of Melbourne, a recognized authority, will give a three pound premature infant twelve ounces of milk *plus* four tablespoons of lactose and then made up to twenty ounces with water (*vide* THE MEDICAL JOURNAL OF AUSTRALIA, January 17, 1942). This would be something more than three of milk to two of water. Surely Kate Campbell knows what she is doing and does not believe the digestive organs and kidneys of her premature infants will be damaged.

V. L. Collins, another Victorian authority, recommends in his book on infant feeding for newborn children artificially fed, milk 2, water 3 for the first week, then equal parts for the next three weeks, and after the first month 3 to 2. From three to five months they are given 2 to 1, after five months 3 to 1.

In England, J. C. Spence, in a lecture before the Royal Institution, reported in the *British Medical Journal*, June 20, 1940, advises a straight out 3 to 1 mixture from the beginning (allowing, of course, a few days for the child to become tolerant to cow's milk), varying the amount, not the proportions, with the age and size of the child.

In America the newborn infant begins with equal parts of milk and water. The second week it is 10 to 8, at a month this becomes 14 to 10, at three months 18 to 7.

Compare these proportions to Karitane, which begins with four teaspoonsful of milk to six ounces of water and at the end of a month is rash enough to reach up to eight and a half ounces of milk to twenty-five of water. Tresillian does start off with a bigger proportion of cow's milk, usually 1 to 2, but still at four months they are only given equal parts. Only today I came across a normal eight months Tresillian baby artificially fed some months. It was having 21 of milk to 19 of water. This is a weaker mixture than Kate Campbell's three months premature babies receive. Of course, both Karitane and Tresillian give plenty of emulsion—a doubtful aid in the hot summer months—in fact I should think this extra added fat might upset irreversibly a child's digestive organs.

I apologize for the length of this letter, but I am frankly puzzled at the conflicting ideas. It does seem that Karitane and Tresillian schools, instead of being a help, may even be a menace. A right start in life is everything. My personal experience and the teaching of world authorities make me believe that both the Tresillian and Karitane systems are wrong.

Yours, etc.,

E. B. FITZPATRICK.

Tamworth,
New South Wales,
January 5, 1943.

## THE FUTURE OF MEDICAL PRACTICE.

SIR: The following aspect in the consideration of salaried or other "controlled" medical service does not appear to have been considered to any extent and it is an aspect which will affect most country practitioners and possibly many of those in the cities and suburbs.

Under the present system we have been free, in so far as finances permit, to choose our practices. Some of us have had to choose districts which, although they provide a good living, do not appeal as ones in which we would like to make our permanent homes, and so when we desire or are able to do so we look about for such a place or for the next step towards it. If we become salaried or "civil servants", it appears to me that we would immediately lose this privilege and at the mercy of some board be pushed here for a year, there for a year and so on.

After twelve years of practice mostly in "one man" towns I feel that I have earned some right of selection as regards my next practice, and doubtless there are scores of my colleagues who think likewise as regards themselves.

Possibly it may be considered that the above view represents a working for our "own selfish interests", but it does not necessarily mean that it is "to the detriment of the public".

Our knowledge of "boards" and political control in this country is such that we view with suspicion and mistrust the possibility of coming under such control, but if such is inevitable, I suppose that we can at least console ourselves with the fact that if we are adequately represented on such boards by our medical leaders they cannot help being an improvement on any of the innumerable boards now in existence.

Yours, etc.,

L. D. HOBBY.

Southern Cross,
Western Australia,
January 6, 1943.

SIR: After an interview with the Parliamentary Joint Committee on Social Security I am alarmed at the future prospects of the medical profession. The salaried system of nationalization was the only one discussed, with particular reference to the National Health and Medical Research Council's scheme. Surprise was expressed at our local Association's strong opposition to any salaried scheme. They expressed the opinion that most previous witnesses were in favour of a wages system.

Have all members given this question the fullest consideration it deserves? Have members become so overworked in assisting to win the war that they are either too tired to think what nationalization entails or too glad to accept something different? Or are they leaving their opinions to be expressed by that smaller and noisier group who become so entangled by their dreams or so hypnotized by popular propaganda that they no longer use their common sense?

A strong united front must be presented against this sapping of our freedom. The approaching convention should be the expression of every member's opinion. As an alternative to any wages scheme I earnestly ask the medical men of Australia to seriously consider the capitation system. Granted that it has not had official favour in the past, but later years, having shown that it is ethically and financially correct, have wiped out all disapproval. The capitation system has flourished in Newcastle for years. Members working under the system find themselves well paid, not grossly overworked in normal times, have time for recreation and can afford necessary holidays. The patients are looked after very well and are quite satisfied. Of course, a nationalization scheme to apply to Australia would need certain hospital and specialist facilities added. Our Association would welcome and give every facility to any member or representative of Branch Associations caring to investigate the local form of capitation system.

Our best means of persuading the Government to depart from an underpaid salary scheme is to offer a good workable alternative. All members working here in Newcastle consider we have it "right here".

Yours, etc.,

C. A. F. CLARK.

20, Bolton Street,
Newcastle,
January 12, 1943.

SIR: In your issue of November 22, 1941, you published from a special correspondent a résumé of the position of affairs up to the first week of November of the same year as regards New Zealand's medical practitioner service, as altered and amended, to meet the various situations that arose, through the inability of the British Medical Association to agree to the Government's scheme for virtually conscripting the profession to work out its "free for all" medical service.

In view of the present position, I think it will be of interest to your readers to hear the views of one of the medical men of Auckland about the present scheme after over a year of experience under it. Here is what he says:

January 9, 1943.

We work under the following schemes. Hospital benefits: All public hospitals give every service free. All private hospital patients get £2 2s. per week from the fund. Maternity benefits: All doctors get £5 5s. for confinements (extra for anæsthetics and accidents, inductions, etc.). Recognized specialists can charge their usual fees and collect the difference from the patient. The maternity hospitals get about £11 11s. for the confinement. Many accept this as full payment, others, by permission of the Government, are allowed to charge more. X-ray benefits: All public hospitals give this service free. Private radiologists charge the usual fee on a list agreed upon (much the same as before the scheme). The Government pays half and the patient half of this fee. General practitioners doing X rays get limited recognition and the Government pays half of an agreed fee, somewhat lower than the radiologist's fee. General practitioner benefits: Two schemes—(*a*) doctors may take at a capitation of 15s. per head up to 4,000 on a panel, or (*b*) they may accept 7s. 6d. per service. Only very few work on capitation. Most work on the fee-for-service scheme. Some accept 7s. 6d. in full payment, and the Government hopes that this will become universal. The Government, however, allows 3s. extra to be charged. The doctors asked for this, hoping it would curb unnecessary calling. Some doctors charge the patient 10s. 6d. and let him get a refund from the Government of the 7s. 6d. allowed. Others take 3s. from the patient and 7s. 6d. from the Government. Mileage is extra in the country. Specialist benefits: At hospitals free. Recently the 7s. 6d. allowed for general practitioner benefit has been extended to specialist services, and the patient can claim this amount as a set-off against the usual specialist fee of one guinea. Operations: Not included as yet, but surgeons allowed to make the usual charge for pre-operation and post-operation treatment. Hospital staffing: No honoraries; senior residents are paid £500 per annum and juniors £300. In addition there is the "visiting staff" or former honoraries.

Materially, all is well with the medical profession, though, owing to the times, many are overworked. Incomes are higher (taxes, too, incidentally). Practice is the same as before, with the difference that all fees are secured. I doubt if the average confinement fee was above £3 3s. previously, and 7s. 6d. certain for every service is a great improvement as you realize.

Well, sir, here is a New Zealand colleague's opinion of their medical "New Order". It does seem to work, and leaves the doctor unfettered in his relation with his patient. There is no local committee to contend with, and it seems to me that if New Zealand, with less than a quarter of Australia's population, can work such a scheme, then it ought to be easier still for Australia with its far greater wealth and population to evolve a comparable or even more liberal medical service.

I commend it to the serious attention of the forthcoming convention.

Yours, etc.,

B. A. COOK.

Anahoe,
Park Road,
Bulli,
New South Wales.
January 20, 1943.

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SIR: Much is being written by medical graduates, for and against, of the nationalization of medicine. For, by people who think they have something to gain. These are, firstly, gentlemen from the poles of the continent who dabble in publicity and who look for a fat administrative job. The British attribute of fair play is not understood by them.

Secondly, there are a few practitioners who favour it because they are disgruntled. More than one of these did their courses on posts and with display of wealth. They think that they will do better under nationalization than their lack of energy has enabled them to do up to date.

There are implications more far reaching than any medical affairs in this proposal, though they are rarely touched upon. Are we, out of all professions, trades and industries, to be socialized and have our liberties filched from us by loud-voiced democrats?

Democrats indeed! With their precarious and temporary majority these parliamentarians will carry through nationalization during the war. Brave hearts, they look to the insecure prospect of the young graduate returning from the wars to support and supply considerable personnel for their scheme. They know as little of the mettle of these men as they do of the endurance and sacrifices which placed them in the ranks of medicine. Nor will they learn anything of it from contact with them during the war as parliamentarians have so far succeeded in making themselves exempt from the armed services.

Some of the advocates of nationalization are sincere, cranks; many, I believe, not even that. And these men, who never displayed the energy and a sacrifice of the delights of youth to place them in a profession, think to gain votes from all sections for a blow at what they conceive to be an unpopular and numerically insignificant profession. Let there be no mistake about this!

The thing they propose, as they imagine, will be a part of the new order. But here our politicians have as little vision as their unfortunate predecessors who were in turn so complacent regarding our country's position in the great world. Yes! There will be a new order, without a doubt! And it will come, not from present-day politicians, but from the real cream of our manhood upon their return from service.

It will not be a new order based on the socialism of cranks and self-seekers, but on the stark necessity for developing this country, in the face of a powerful enemy, as a populated self-reliant nation which will and must provide all the material, human and mechanical, for the future defence of a grand country, and rely no longer on the protecting arms, willing though they be, of the splendid Old Country and our magnificent good neighbour across the Pacific.

This will be the new order, not the "trend the world over" to socialize medicine and anything or everything else. The "trend the world over" in medicine, as I see it, is a world comprising New Zealand and Russia. I say this without the least thought of disparagement, but with a great admiration of our two gallant partners.

Yours, etc.,

W. MAXWELL.

141, Macquarie Street,
Sydney,
January 15, 1943.

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SIR: Several conclusions are reached on reading Dr. H. R. R. Grieve's letter in today's issue of the journal: that he is sincere in his views and loyal to the Hippocratic oath and finest traditions of the medical profession, which, of course, goes without saying; that he has complete faith in the present methods of professional service to the public, allowing for constructive improvements; that all who think differently from him are "Jeremiahs" or "Judases"—ensnared by his impatient eloquence he does not even concede the word "idealists"—and he appears to regard with suspicion all who would argue with or differ from him.

Commenting on these conclusions, I wish to affirm firstly, that the large body of medical men are loyal to the spirit of the oath of Hippocrates and anxious to serve their fellow-men faithfully and as sympathetically as the traditional "family doctor"; that the nature of their profession and the practice of it confirm that attitude, and that if there are any unworthy they are the few, the very few, who will function unworthily and remain unworthy in any set of conditions—in all of which, I think, Dr. Grieve will concur; but secondly, that it is a denial of all human progress to insist that deliberate consideration of possible change or planning is unnecessary or subversive.

Study of the relationship between the practice of medicine and the public is pressed upon us by governments and popular sentiment—perhaps we may say by the tide of human history.

The time and opportunity are with us for such consideration. If we are not hidebound in outlook, or if indeed, we are not selfish or over-fearful, we will recognize the fact. If we refuse to admit our responsibility to face up to circumstances, we dodge an issue as clear and inevitable as the present war when it was dawning, and so many refused to see the signs, portents and deeds which were all about them, with the consequent unpreparedness.

Whether any of us like it or not, our relationship to the public is before us for consideration, and we are still free to face the problem and discuss it. If we recognize that as a body of men of a profession vital to the well-being of the community, we are indeed at a period of our national history and development when we may discuss, formulate and express just, well-reasoned, helpful views on matters intimately concerning ourselves and the future practice of medicine, then indeed we may help to avoid the realization of any of Dr. Grieve's worst fears and add our contribution

to the stable thinking and conduct so necessary in troubled and clamorous days. If we can present after our deliberations sufficient answer, there need be in the future, let us hope and expect, no tyranny or undue direction, no meddlesome or stifling bureaucracy which would be fatal to the best concepts and practice of medicine, no loss of enthusiasm, efficiency or human happiness. We may, between us, envisage and advise some new conditions or general scheme —it may be we shall agree completely or nearly with Dr. Grieve, with whose views on the method and spirit of medical service I myself sympathize very closely. Whatever it is, it must be based on the highest ideals of service and progress, and respond to the demands of the day, that the needs of the community, including doctors themselves, shall be closely scrutinized and satisfied; that the doctor himself shall be freed from the fear of economic failure (especially the young man starting life) and have safeguarded for him proper relaxation and time for cultural improvement.

Without any extravagant idealism which ignores the possibility of human error and weakness in conceiving and planning, without any ostrichism, which refuses to see where the tide of democratic development is placing the medical profession, and without presuming in this letter to offer any personal views except that, notwithstanding (as I have indicated by my stated preference) that I feel an adequate service could be built upon our present structure, I dare to insist that we are in a situation where we must review and consider, and may still plan if necessary, before all planning is done for us perhaps, by some who have not the insight or knowledge to perceive the real issues involved. I urge speedy and frank acceptance of the problem together with the political awareness enjoined upon any good citizen of adult mind. I urge, too, the right and the duty of each man to think for himself, seeking sound information on the many aspects involved, acquainting himself not only with immediate problems but with sufficient knowledge of the complete history of the practice of medicine in this and other countries, in this and other times, as also of the social developments in our national history, so that he may have true knowledge and perspective. I would urge frank discussion, tolerant and well-informed, in groups, in Branches, in convention, debating without rancour or prejudice. Thus we shall cohere as a body, form judicial opinions and become united in sound and reasoned policy.

Yours, etc.,

Hurstville, New South Wales, January 16, 1943.

A. C. THOMAS.

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SIR: Dr. H. R. R. Grieve, in his wisdom, has drawn our attention (THE MEDICAL JOURNAL OF AUSTRALIA, January 16, 1943) to the fact that the draft scheme of the National Health and Medical Research Council for a salaried medical service will certainly be used by the Government as a basis for discussion with the profession of the future of medical practice in this country.

This being so, it is vitally important that every doctor give it his closest individual attention in the light of his personal professional history and experience.

Whatever our reaction to the draft scheme, we will gain nothing by adopting the attitude that the present system need not and must not be tampered with. To do so would be to ignore the inevitability of social evolution, the mounting antagonism of public opinion, and changes already in practice and taking place in other parts of the world.

Dr. Grieve feels that the draft scheme proposals are repugnant to justice, in that they make no mention of compensation to existing practitioners for the capital value of their practices. This would be unjust only if the doctor was denied a livelihood under the new scheme, for the fact is, that the capital value of a doctor's practice in terms of money would be higher under a system of salary, sick leave, and pension than under the present system. The problem of cash compensation does not exist.

Dr. Grieve will not let the "freedom of choice" bogy rest, and he revives it once more. Sir Raphael Cilento destroyed this cherished illusion once and for all with incontrovertible facts and nice logic in his masterly letter to your journal last year. The deathly silence in the profession which followed this letter was no less remarkable than that which followed publication of the draft scheme, which Dr. Grieve mentions.

"Let it never be forgotten", says Dr. Grieve, "that medicine in this country is part of medicine of the whole world, and of medicine of 2,000 years." This golden heritage cannot be debased, or its glory be tarnished.

The storm and the wind rid the tree of its dead branches, and the rotten fruit falls off of its own rottenness. The red lamp and the honorary system may be going the way of the surgeon's pole and the quack blister, but medicine goes on forever, and we are privileged to share in its world-wide growth and development.

Yours, etc.,

193, Macquarie Street, Sydney, January 22, 1943.

GODFREY APPEL.

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## THE FEDERAL COUNCIL OF THE BRITISH MEDICAL ASSOCIATION IN AUSTRALIA.

SIR: In Dr. A. E. Lee's interesting presidential address in the current issue of the journal there is a discussion on a matter of importance to all members of the Association. It concerns the following statement (page 47): "At present, by its Constitution and its practice, the Federal Council is ill-fitted to carry this load of responsibility."

Dr. Lee's statement is made in regard to the role of the Federal Council, and I beg to state as one of the subscribers of the Memorandum at the inception of the Federal Council in 1933 that I find it difficult to agree with his opinion.

Dr. Lee also states that the Federal Council is ill-fitted to formulate a policy of its own. However, I am of the contrary opinion to Dr. Lee and think that there is ample machinery under the Memorandum and Articles of Association for the Council to do all that is required of it by the members of the Association in Australia.

Under present conditions it would be a great mistake to do as Dr. Lee suggests, to give the Federal Council power to bind the Branches by its decisions. Great care was taken to avoid anything of the kind when the Federal Council was formed. It will be seen by Article 25 (page 16 of the Memorandum and Articles of Association) that it is mandatory for the Federal Council to be a medium for communication with the Federal Government on behalf of the Branches collectively.

It is difficult to understand why Dr. Lee is not satisfied with this arrangement. In a case like that quoted of the repatriation matter, if a Branch is not satisfied with the action of the Federal Council, all that is necessary is for it to say so; in which case it is not possible for the Federal Council to make such Branch a party to the negotiations with the Federal Government.

In a somewhat similar manner on the question of the Federal Council not representing the members (as instanced in the case of the high federal medical officer), obviously the representation only exists at the express desire of a Branch.

Then again, in regard to the national insurance question, in 1938, the Federal Council could not act on behalf of all the Branches without the assent of all.

It would appear from correspondence in the journal, and from the final words of Dr. Lee's address, that the Federal Council's greatest difficulty arises from the fact that it does not know the opinions of the members as a whole. This defect should be repaired, and machinery for effecting improvements is ready to hand within the framework of the Memorandum and Articles of Association.

There are two outstanding requirements: (i) The establishment of a Federal Secretariate at Canberra. (ii) The holding of a convention at Canberra at an opportune time for the purpose of obtaining the opinion of the rank and file of the profession on the future of medical practice in Australia.

In regard to (i), the advantages of this step are obvious, and it would be quite easy for the officer in charge of the Secretariate to visit Branches as occasion demanded.

In regard to the convention (ii), the representation might be on the basis of one representative for each federal electorate.

After the arrival at definite opinions on the principles that should underlie medical practice in the future, they could be discussed at a meeting of the Federal Council and ultimately become the basis of rules or by-laws of each Branch. In this way there would be no question of the attitude of any of the component parts of the Association being "out of step" with the others, and a united front could be presented in our dealings with outside bodies.

Yours, etc.,

639, Sandgate Road, Clayfield, Queensland. January 16, 1943.

E. S. MEYERS.

# Obituary.

## LIONEL OXBORROW BETTS.

We regret to announce the death of Dr. Lionel Oxborrow Betts, which occurred on January 19, 1943, at Adelaide, South Australia.

# Naval, Military and Air Force.

## CASUALTIES.

According to the casualty list received on January 18, 1943, the undermentioned, who were previously reported missing, are now reported to be prisoners of war: Captain T. G. H. Hogg, A.A.M.C., Launceston; Lieutenant-Colonel R. M. W. Webster, A.A.M.C., Campbelltown; Major F. P. C. Claffy, A.A.M.C., Sydney; Lieutenant-Colonel W. C. B. Harvey, A.A.M.C., Sydney; Captain D. C. C. Hinder, A.A.M.C., Gordon; Captain R. T. Wilkinson, A.A.M.C., Rose Bay; Captain M. K. Winchester, A.A.M.C., Maitland; Captain P. I. A. Hendry, A.A.M.C., Strathfield; Major P. F. Murphy, A.A.M.C., Bellevue Hill.

According to the casualty list received on January 19, 1943, Colonel V. C. Rider, A.A.M.C., New Norfolk, has been removed from the "dangerously ill" and "seriously ill" lists.

According to the casualty list received on January 19, 1943, the undermentioned, who were previously reported missing, are now reported to be prisoners of war: Major H. L. Andrews, A.A.M.C., Murchison; Major H. H. Eddey, A.A.M.C., Footscray; Captain J. L. Frew, A.A.M.C., Toorak; Captain G. J. Horder, A.A.M.C., Malvern; Major R. B. Maynard, A.A.M.C., Newport; Major R. G. Orr, A.A.M.C., Toorak; Lieutenant-Colonel C. H. Osborn, A.A.M.C., Toorak; Major H. W. Park, A.A.M.C., Melbourne; Captain R. R. Paterson, A.A.M.C., Caulfield; Major H. A. Phillips, A.A.M.C., Caulfield; Captain A. W. Rogers, A.A.M.C., Elwood; Major J. O. Rosson, A.A.M.C., Shepparton; Major J. J. Searby, A.A.M.C., Warracknabeal; Captain F. R. Vincent, A.A.M.C., Frankston; Major H. A. W. Watson, A.A.M.C., East St. Kilda; Captain M. F. A. Woodruff, A.A.M.C., Kew; Lieutenant-Colonel H. F. Summons, A.A.M.C., Kew; Captain F. W. S. Finch, A.A.M.C., Mt. Lawley; Major A. R. Home, A.A.M.C., Albany; Major A. W. Farmer, A.A.M.C., Cottesloe; Major B. W. Nairn, A.A.M.C., Perth.

According to the casualty list received on January 21, 1943, Captain R. M. Mills, A.A.M.C., Narrabeen, and Captain J. B. Oakeshott, A.A.M.C., Lismore, who were previously reported missing, are now reported to be prisoners of war.

## DECORATIONS.

Lieutenant-Colonel Bertram Speakman Hanson, O.B.E., A.A.M.C., and Lieutenant-Colonel William Wettenhall Lempriere, A.A.M.C., have been created Companions of the Distinguished Service Order.

Captain William Hay Campbell, A.A.M.C., and Captain Phillip Charles Ryall Goode, A.A.M.C., have been awarded the Military Cross.

# Nominations and Elections.

The undermentioned have applied for election as members of the New South Wales Branch of the British Medical Association:

Hipsley, Percy Donald, M.B., B.S., 1942 (Univ. Sydney), 139, Victoria Road, Bellevue Hill.

Waters, James Howard Stewart, M.B., B.S., 1941 (Univ. Sydney), Balmain and District Hospital, Balmain.

# Medical Appointments.

Dr. Edward Leslie Gault and Dr. Arthur Herbert Joyce have been appointed members of the Opticians Registration Board of Victoria, pursuant to the provisions of the *Opticians Registration Act*, 1935, of Victoria.

# Books Received.

"J. F. Sutherland's First Aid to Injured and Sick", by Halliday Sutherland, M.D., Forty-Fourth Edition; 1942. Edinburgh: E. and S. Livingstone. 4¼" × 2¾", pp. 77, with 46 diagrams, one coloured. Price: 6d.

"Blood Substitutes and Blood Transfusion", edited by Stuart Mudd, M.A., M.D., and William Thalhimer, M.D.; 1942. Springfield, Illinois: Charles C. Thomas; London: Baillière, Tindall and Cox. 9¼" × 6", pp. 421, with illustrations. Price: $5.

# Diary for the Month.

FEB. 2.—New South Wales Branch, B.M.A.: Organization and Science Committee.
FEB. 3.—Western Australian Branch, B.M.A.: Council.
FEB. 4.—South Australian Branch, B.M.A.: Council.
FEB. 5.—Queensland Branch, B.M.A.: Branch.
FEB. 9.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
FEB. 12.—Queensland Branch, B.M.A.: Council.
FEB. 13.—Tasmanian Branch, B.M.A.: Annual Meeting.
FEB. 16.—New South Wales Branch, B.M.A.: Ethics Committee.
FEB. 23.—New South Wales Branch, B.M.A.: Medical Politics Committee.
FEB. 25.—South Australian Branch, B.M.A.: Branch.
FEB. 26.—Queensland Branch, B.M.A.: Council.

# Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

*New South Wales Branch* (Honorary Secretary, 135, Macquarie Street, Sydney): Australian Natives' Association; Ashfield and District United Friendly Societies' Dispensary; Balmain United Friendly Societies' Dispensary; Leichhardt and Petersham United Friendly Societies' Dispensary; Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney; North Sydney Friendly Societies' Dispensary Limited; People's Prudential Assurance Company Limited; Phœnix Mutual Provident Society.

*Victorian Branch* (Honorary Secretary, Medical Society Hall, East Melbourne): Associated Medical Services Limited; all Institutes or Medical Dispensaries; Australian Prudential Association, Proprietary, Limited; Federated Mutual Medical Benefit Society; Mutual National Provident Club; National Provident Association; Hospital or other appointments outside Victoria.

*Queensland Branch* (Honorary Secretary, B.M.A. House, 225, Wickham Terrace, Brisbane, B.17): Brisbane Associated Friendly Societies' Medical Institute; Bundaberg Medical Institute. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

*South Australian Branch* (Honorary Secretary, 178, North Terrace, Adelaide): All Lodge appointments in South Australia; all Contract Practice appointments in South Australia.

*Western Australian Branch* (Honorary Secretary, 205, Saint George's Terrace, Perth): Wiluna Hospital; all Contract Practice appointments in Western Australia.

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Members and subscribers are requested to notify the Manager, THE MEDICAL JOURNAL OF AUSTRALIA, Seamer Street, Glebe, New South Wales, without delay, of any irregularity in the delivery of this journal. The management cannot accept any responsibility unless such a notification is received within one month.

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